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ABSTRACT

This volume focuses on elaborating the concept and design of a Regional Environmental Learning System (RELS). Chapters are devoted to close examination of concept and design including: (1) introduction, (2) definition of RELS, (3) RELS structure and operation, (4) dealing with environmental issues through RELS, (5) mobilizing interest in RELS, (6) experimenting with a RELS, and (6) institutionalization of RELS. Appendices include sources of theoretical models for the RELS and a bibliography. (RE)

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RESEARCH LABORATORIES FOR THE ENGINEERING SCIENCES

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DEVELOPMENT OF AN INTERPRETIVE STRUCTURAL MODEL AND STRATEGIES FOR IMPLEMENTATION BASED ON A DESCRIPTIVE AND PRESCRIPTIVE ANALYSIS OF RESOURCES FOR ENVIRONMENTAL EDUCATION/STUDIES

CREATING A REGIONAL ENVIRONMENTAL LEARNING SYSTEM

VOLUME III

Submitted to:

Office of Environmental Educaton
Department of Health, Education and Welfare
400 Maryland Avenue, S.W.
FOB #6, Room 2025
Washington, D. C. 20202

Submitted by:

John N. Warfield

Report No. UVA/522032/EE79/126

August 1979

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RESEARCH LABORATORIES FOR THE ENGINEERING SCIENCES

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A SOURCEBOOK FOR THE DESIGN OF A REGIONAL ENVIRONMENTAL LEARNING SYSTEM

VOLUME III

CREATING A REGIONAL ENVIRONMENTAL LEARNING SYSTEM

Contract No. 300-700-4028

Work Supported Under the
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A SOURCEBOOK FOR THE DESIGN
OF A
REGIONAL ENVIRONMENTAL LEARNING SYSTEM

VOLUME III

CREATING A REGIONAL ENVIRONMENTAL LEARNING SYSTEM

PREFACE

This is one of six Volumes of a report which, collectively, is intended to be a Sourcebook for the Design of a Regional Environmental Learning System. The report was prepared under Contract 300-700-4028 with the Office of Environmental Education.

This six-volume report presumes some background concerning the concept of a Regional Environmental Learning System, and with environmental education as a whole. Considerable relevant background was supplied in Volume 9 of the 4th Quarterly Report (A Descriptive Analysis of Environmental Education) and in the 5th Quarterly Report (Conceptual Basis for the Design of Regional Environmental Learning Systems), both of which are available from the Office of Environmental Education.

Volume 1 contains an Overview of the Sourcebook, with short summaries of the other Volumes.

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VOLUME 3:
CREATING A REGIONAL ENVIRONMENTAL LEARNING SYSTEM

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Final Report for the Project:

Development of an Interpretive Structural Model and Strategies for Implementation Based on Descriptive and Prescriptive Analysis of Resources for Environmental Education/Studies

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Volume 3:

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Chapter 1

AN EMERGENT DESIGN FOR ENVIRONMENTAL EDUCATION

Introduction

During the early phases of this project we developed several definitions of environmental education. These definitions are summarized in Volume I, Overview. As we were defining environmental education, and developing the normative model of environmental education, a set of ideas, concepts, and images emerged that formed the basis of an overall design for environmental education. This emergent design, which we later called a Regional Environmental Learning System (RELS), was contained in a tacit and semi-organized way in the many grants and contracts sponsored by the Office of Environmental Education under the Environmental Education Act of 1970 (P.L. 91-516 as amended). The construction, critique, and reconstruction of the normative model was undertaken to shed more light on that design. The goals of the normative model were: 1) to organize the many components of the emergent design into a coherent framework; 2) to discover the controlling idea of the emergent design; and 3) to develop some guidelines that would assist in creating this design, a RELS, in different regions throughout the country.

The main purpose of Chapter 1 is to outline some of the events and activities that led to the discovery of the controlling idea, which we call collective inquiry and action. The chapter concludes with an overview of the remaining chapters of this volume. The major purpose of this volume is to outline the major guidelines that would assist people in creating a RELS that is appropriate to their region of the country.

Defining Environmental Education

Is there a consensus on what environmental education should be? Many projects sponsored under the Environmental Education Act give partial answers to this question. The normative model represents an initial attempt to synthesize these answers into a coherent picture of what environmental education should be.

Background on the Normative Model

The normative model of environmental education (folded in the pocket on the front cover of this report) is one of several products of the contract between the Office of Environmental Education and the University of Virginia and subcontractors. Completed in mid-1978, it provides the basis of the other contract products, especially the designs and implementation strategies for environmental education.

Purpose of the Normative Model

In preparing the normative model, our purpose was to review statements that legislators, educators, researchers, and other experts have made about what environmental education should be, and to make explicit the desired or normative model of environmental education expressed or implied in various sources. This was accomplished by a search through the Environmental Education Act and Regulations,* the Arizona report,+ the Tbilisi report,** and other documents concerned with normative environmental education. From these, implied elements were extracted and organized into a logical structure. Additional elements that were deemed important were added by project personnel. Our intention in carrying out this task was that the resulting model could be used to help establish future goals and directions for environmental education.

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*Financial Assistance for Environmental Education Projects. Federal Register, Volume 39, No. 99. May 21, 1974.

+University of Arizona. Environment-Based Environmental Education: Inventory, Analysis, and Recommendations. (Tucson, AZ: University of Arizona, June 1978).

**United Nations Educational, Scientific and Cultural Organization. Education and the Challenge of Environmental Problems. (New York, NY: United Nations, 1977).

Method of Constructing the Normative Model

The normative model of environmental education was created with the use of interpretive structural modeling. Work on it progressed through three stages. First, the working groups at Battelle, the University of Dayton, the University of Northern Iowa, and the University of Virginia held individual preliminary sessions to construct their own initial models. The second stage involved a two-and-a-half day intermediate session in Dayton. At this session representatives of the groups worked to integrate the four maps. In the final stage, the University of Dayton group completed the process of integration and documented the results for review by the other participants. The final report, An Integration of Normative Models for Environmental Education (1978), incorporated comments received from the primary contractor as well as from the other subcontractors.

Activity 1: Generating the Elements

The initial list of 103 elements was supplied by John Warfield; the elements were those named or implied in:

- the Environmental Education Act and Regulations;
- the Arizona Report;
- the Tbilisi Report; and
- past OEE grant descriptions.

This list was distributed to the subcontractors with the instructions to use it and modify it as necessary, keeping track of the original source of each element. Additions to the element list were also acceptable, provided reasons were stated.

Activity 2: Preliminary Structuring Sessions

All four working groups began their preliminary modeling sessions for the normative model or map with the same initial element list. The groups, however, were free to amend this list as they saw fit, and to choose the elements they wanted to include in their preliminary models.

The purpose of the separate preliminary sessions was to enhance the quality of discussion at the subsequent meeting of the Combined Working Group. It was felt that developing a normative map of environmental education was a more challenging task than describing the "environment" or "environmental education," because value judgments were needed to construct what should be. Four groups with diverse backgrounds worked independently to explore differences in values, terminology, and conceptual understanding. They were then invited to share these insights at the Dayton meeting.

Activity 3: Intermediate Structuring Session

The second stage in the development of a normative model of environmental education involved a group session held in Dayton from 30 April - 3 May 1978. Eight people participated as representatives of the subcontractors group. Walter Bogan, Director of the Office of Environmental Education, attended as an observer.

First, each team gave a progress report and posted its preliminary map. As a result, some common problems with the master element list were raised. The group also began a list of definitions for some of the more ambiguous terms. Battelle's distinction between the words "assess" and "evaluate," for example, was particularly useful during the rest of the session. While "evaluation" can be applied to a past occurrence, "assessment" adds a future perspective, i.e., an examination of alternative courses of action or anticipated outcomes.

The element list illustrated the range of ideas that exist in the area of environmental education. The purpose of the project was to improve understanding of the terms and to clarify the relationships that already exist. We needed to create little, but rather had to come to a better understanding of what had evolved -- in other words, "to pull environmental education together." We needed to clarify the philosophy behind what is done in environmental education; that is, how the philosophy relates to policy, and how policy relates to decisions about environmental education in the schools and the community. The normative model tried to capture that philosophy.

The next task for the Combined Working Group was to create a revised normative model of environmental education, still using interpretive structural modeling. The master list, with some amendments, was used to begin the exercise. New elements were created where the group felt necessary, and definitions were recorded. John Warfield and Walter Bogan helped by providing background information on the sources of elements.

The group chose elements that gave a cross-sampling of the master list. Ambiguous elements were also purposely chosen for the opportunity to reach a consensus on them and to provide the University of Dayton team with a basis for completing the model. The relationship used for this exercise was: "Should Element A logically precede Element B in the first iteration?"

At the end of the intermediate session, twenty-two elements had been incorporated into the integrated model. Learning outcomes appeared at the top of the map. At the bottom were elements of program planning, or "the activities needed to provide a framework or context for environmental education." Included in these were the core themes, collecting information on environmental education, and social diagnosis and prognosis.

Activity 4: Producing an Integrated Model

The first step for the University of Dayton team was to review the entire element list, making definitions consistent. New elements were added to reflect the group discussion, particularly on learning outcomes; then each element was assigned to categories, such as curriculum development, personnel development, learning outcomes, and others.

Using the structure created by the Combined Working Group, and starting with the relationship: "Should Element A logically precede Element B?," the University of Dayton added about one-third of the remaining elements to the model. Logical groups of the elements began to emerge at this point, which suggested a change in tactics. The relationship of logical precedence had allowed us to create a hierarchical structure with a time flow. However, all the working groups recognized the need for cycles or feedback, which "logical precedence in the first iteration" does not permit, so we changed the relationship to: "Should Element A help achieve Element B?," which does permit cycles and feedback.

By the time about sixty elements had been structured into the model subsets of the larger model began to emerge. These subsets were groups of like activities, or mutually supportive activities, such as planning, personnel development, and learning system design. The University of Dayton team structured the remaining elements into the appropriate subsets, and then integrated the subsets into the larger model. The subsets gave some insight into the total model, and the total model suggested changes in the subsets. So the Dayton team completed the normative model by working from the larger model to the smaller ones and vice versa.

During the integration, the University of Dayton team checked questionable relationships by referring to previous work of the working groups. When the model was complete, it was distributed to the primary contractor and subcontractors, along with an explanation of how it was created and some implications perceived by the Dayton group.

Activity 5: Feedback from Contributors

The best opportunity for comment on the draft model came at the project's Advisory Committee meeting on 15-16 June 1978. Walter Bogan, John Warfield, and other subcontractors expressed satisfaction with the general structure of the model (if not with the precise placement of the elements). However, the Advisory Committee's reaction to interpretive strucural modeling made it clear that persons who are unfamiliar with the method and who have not participated in structuring a particular model do not find an interpretive structural model very illuminating. For the time being, the project group elected to make only those changes that clarify the model, and not to make extensive revisions in the graphic manner in which the model is presented. It was agreed that such a revision might be required if the model were to be broadly disseminated.

Activity 6: The Final Normative Model

As a result of comments made largely at the Advisory Committee meeting, the Dayton group reworded a number of elements and added several new ones. The final normative model consists of 141 elements, and is referred to as the "big map."

An Explanation of the Normative Model

The normative model shows graphically what educators, legislators, researchers, grantees, and others have said environmental education *should* or *could* be, not necessarily what it is. The *structure* of the model is based on how the elements are related to each other, using one relationship: "Should Element A help achieve Element B?" It is worth repeating that the structure of the normative model was not something that we conceptualized in advance, but something that evolved as a result of our modeling sessions using interpretive structural modeling. We realized that we were dealing with various types of elements, and the method helped us sort and organize them. The normative model represents a *management framework* for environmental education.

Overview of the Normative Model

The size of the original element set led to a very large normative model, which we refer to as the "big map." For purposes of discussion, it is usually easier to refer to the "little map," which shows the model as several subsets of related elements. This "little map" is shown in Figure 1.1.

The subsets of the model are:

- *Planning* lies at the base of the map and sets into motion the development of core themes, funding, and institutional support.
- *Learning Systems Design* is largely concerned with developing and modifying curricula and community education approaches to meet environmental education objectives.

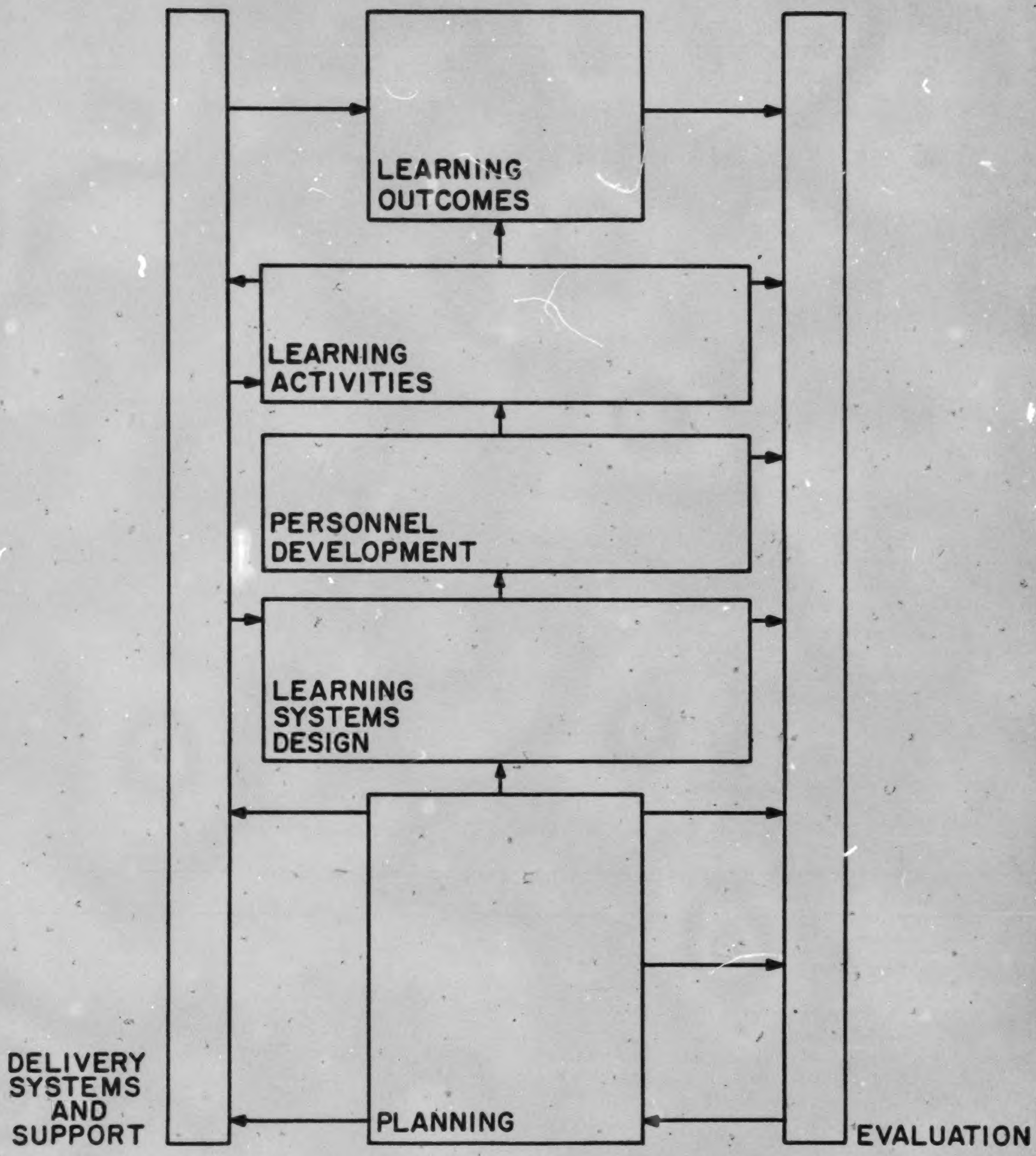

Figure 1.1: Subsets of the Normative Model

- Personnel Development provides for training of teachers and community education facilitators.

- Learning Activities is the actual conduct of programs laid out in Learning Systems Design.

- Learning Outcomes is the realization of the various environmental education goals set forth in the Act and elsewhere.

- Delivery Systems and Support includes activities that will institutionalize environmental education and provide for dissemination of newly developed materials and approaches.

- Evaluation, like delivery systems and support, is a continuing set of activities that intermesh with the five central subsets.

The "little map" shows the subsets of the normative model of environmental education produced by the working groups. Elements at the bottom of the finished model lend support to all elements above them in the structure, and thus can be said to logically precede them. However, there were two sets of elements (activities) that are carried out at many levels and are best illustrated as continuous processes. These are the activities of dissemination and support, and of evaluation. Therefore, the long vertical rectangle at the left of the little map represents ongoing delivery systems and support, and that at the right of the map represents ongoing evaluation.

The normative map served as a guide and as a source of questions during the remainder of the project. As ideas were developed about the Regional Environmental Learning System (RELS), the map was used to test those ideas. Such questions as, "Is this idea consistent with the normative map?," and "How does this idea elaborate the normative map?," guided our exploration. In examining the normative map, especially the subsets of learning activities and learning outcomes, the controlling idea of "collective inquiry and action" emerged as key to the design and implementation of the RELS.

Collective Inquiry and Action: A Controlling Idea Behind the RELS

In our first composition course we learn that the design of a good paragraph requires a controlling idea that gives coherence to the paragraph and contains the essential concept to be communicated in the paragraph. Every sentence is built around the controlling idea.

The same holds true for the design of a social process, such as a Regional Environmental Learning System. The design must be built around a controlling idea that gives coherence to the design and contains the essential concepts to be embodied in the social process. All the elements of the design must be built to support that controlling idea.

As we examined the multitude of environmental education projects emerging throughout the country, we discovered emergent systems in a variety of regions that were designed to facilitate learning about environmental issues and themes. These emergent systems, which we call Regional Environmental Learning Systems (RELS), have many similar characteristics. RELS are people, in communities and schools, organized to address environmental themes and issues. The participants believe that more learning about environmental issues will have an impact on the future development of their region. They also believe: 1) that present school curricula and community institutional arrangements are not adequate for completely addressing these issues, and 2) that new approaches must be taken to improve the way issues are understood and resolved.

The controlling idea, or dominant theme, in these new approaches is the process of collective inquiry and action, which brings together a diversity of individuals from the community, from school systems, and from community agencies. Through this process of collective inquiry and action, RELS participants study important regional environmental themes and issues, and oftentimes develop environmental policies and programs of action to address these themes and issues. Key decision-makers in the region are influenced by the RELS participants to implement environmental policies and programs of action. RELS participants forge new cooperative arrangements, which expand and mobilize the resources needed to undertake this process of collective inquiry and action. RELS is an organizational setting where learning about the environment comes simultaneously with creating a more human environment. Chapter 2 develops this controlling idea of collective inquiry and action in a more concrete and detailed manner.

Overview of This Volume

This volume focuses on elaborating the concept and the design of the RELS as well as on the controlling idea of that design -- collective inquiry and action. Each chapter addresses a particular facet of the concept and the controlling idea.

Chapter 2 looks at the concept of a RELS. It begins with descriptions of four examples which show RELS-like qualities and help clarify the concept. We then use the examples to identify common characteristics of RELS. To do this, we examine the new demands placed on institutions of governance and education by the rise of environmental issues, examine why traditional institutions have not been able to respond to these new demands, and examine why RELS-like entities have been more successful in meeting the new demands. We will see that a RELS complements the traditional institutions of governance and education.

Chapter 3 examines several models that will be useful in creating a design for a RELS that is appropriate to a particular region, and then, in developing an implementation strategy for the RELS. The "still picture" model outlines the essential processes of collective inquiry and action. This model can be utilized to design an effective process of collective inquiry in the local region. Guidelines for the design of RELS by the RELS participants are expressed in the "moving picture" model of the RELS.

Chapter 4 presents "A Road Map for Resolving Environmental Issues." Using a combination of "road maps," or charts, and prose descriptions, this chapter offers step-by-step guidelines for actually carrying out the primary processes of collective inquiry -- dialogue, decision, action, and evaluation. We call these steps the issue resolution cycle because their purpose is to resolve an environmental issue and because they occur repeatedly during the existence of the RELS.

Chapter 5 describes the first phase of RELS development, "Mobilizing Interest in the RELS." The chapter is addressed primarily to the organizer -- the person with the original idea for a RELS -- who is the most important actor during Phase 1. Whether or not a RELS develops depends on two conditions and a series of actions we describe under the heading of planning activities and mobilizing activities. Phase 1 concludes with a commitment from a sufficient number of people to try the RELS approach on a particular issue or theme. Suggestions and examples are offered for guiding a group through this phase.

Chapter 6 looks at what happens the first time a RELS undertakes an issue resolution. The period devoted to "Creating the Initial RELS Experiment" is the second phase of RELS development. At this point, a leadership group is becoming apparent and assumes much of the responsibility originally held by the organizer. During Phase 2, the RELS leaders and members must decide how to recruit more members and prepare them for issue resolution, how to organize themselves for the first issue, and how to evaluate their efforts. This phase should be considered a "test" of what the group believes their RELS should be.

Chapter 7 describes the process of "Institutionalizing the RELS" in the region. How does a RELS advance from one or two successful experiences with collective inquiry to become a useful, accepted part of the region's environmental education?. The outcomes of Phase 3 are legitimacy; a clearer design; established procedures for collective inquiry and action; and policies on recruiting members, training leaders, and enlarging network ties. After discussing each of these, the chapter concludes with a look at RELS from a different perspective. We approach RELS as a change and examine the likely implications of such a change.

Summary

This chapter outlined the process by which the concept of a Regional Environmental Learning System (RELS) and the controlling idea for the design of a RELS emerged during the early stages of the project. The process of building the normative model for environmental education was outlined. The controlling idea -- collective inquiry and action -- was discussed. Collective inquiry guides both further reflections on the design of a RELS and the implementation of this design. Finally, Chapter 1 concludes with an overview of the remaining chapters.

Chapter 2

WHAT IS A REGIONAL ENVIRONMENTAL LEARNING SYSTEM?

How would you identify a Regional Environmental Learning System (RELS) if you saw one? After you have read this chapter we hope that you have developed an appreciation for a RELS that would allow you to identify a RELS if you saw one and, more important, create one for resolving environmental issues in your own region.

RELS: An Emergent Concept

To help you develop the concept of a RELS, we will first describe some specific examples of RELS. Then, in order to improve your understanding of this concept, we will explore the situation that has given rise to these new organizational forms that we call RELS. The chapter will conclude with a description of the basic characteristics of a RELS.

Developing an appreciation of the concept "RELS" is a difficult task. For example, most of us know what the concept "car" represents; yet when we encounter a car in reality, it is a specific kind of car -- for example, a Chevy or a Ford. No one has seen the concept "car," yet whenever we see a Chevy or a Ford, we know that it is a car. "RELS" is a concept just like the concept "car;" it is an abstraction. You never really see a "RELS" -- only specific examples of a RELS.

Yet there are major differences between the concept "car" and the concept "RELS." Nearly everyone understands the meaning of the concept "car," and the word is frequently used in our everyday conversation. Currently, "RELS" is a fuzzy concept without a clear meaning. At best, "RELS" is an emergent concept that will eventually become part of everyday conversation. The concept "RELS" is in much the same position as the concept "car" was in the days of the "horseless carriage."

Existent RELS

Although the RELS has recently emerged as a new type of organization, there are already several examples of RELS-like entities throughout the United States. In this section, we briefly describe some of the well known and not so well known RELS. These descriptions give concreteness to the concept of RELS as it is developed later in this chapter.

Essex Network

Sarason and his associates (1977 and 1979) have extensively examined resource exchange networks. The main case study they used to develop their ideas is the Essex network. The Essex network is an informal association of people from a wide variety of settings in education and human services; some are members of university faculties, some directors of human services agencies, others are members of local school boards. The network emerged about six years ago, when one individual held some meetings with others in the community whom she had identified as likely to benefit from an exchange of resources. At the beginning, the emphasis was on exchanging resources for the mutual benefit of network participants and on forming a sense of community among people who work in various educational and human services agencies and organizations. The network did not emerge suddenly, but rather it developed over a period of time as various members met with each other, shared ideas, and worked on projects.

The Essex network deals with a large variety of projects and tasks -- many of them concern education. The following description of an environmental education project illustrates how some members of the Essex network worked together to take advantage of a fortuitous set of circumstances and opportunities around the theme of water quality. In this project, a high school science teacher used the network to involve students in environmental research projects and local citizen participation efforts.

Environmental Education Project*

1. October 5, 1975. In the process of talking with a friend, a network member learns that the county of which Essex is a part has just received a Federal grant for developing environmental programs, including research in and improvement of water quality. The county has numerous lakes, streams, and reservoirs. The network member talks this over with another member, S.R., the network coordinator, who is coordinating environmental programs and who agrees to get more information about the law and the grant.

2. October 21. S. R. meets with a representative of the task force with responsibility for the county program. The official explains different sections of the law, including the public participation requirements. S. R. tells her that a number of network members are quite interested and involved in environmental education, including one high school science teacher interested in placing students in real research situations. The official suggests a meeting between S. R. and the official charged with developing citizen participation.

3. October 30. The meeting takes place between S. R. and the "community participation specialist." The specialist explains that the law requires regular public meetings and asks S. R. to urge interested network members to attend the first meeting.

4. November 5 and 20. S. R. attends two public meetings together with A. A., who is a science teacher in the Essex high school. For the past year, A. A. has had several of his students doing research studies on the water quality of the local reservoir. Several years back an interstate highway was built adjacent to the reservoir, and there was concern about the effects of this construction and the traffic on water quality. The research suggested there was a basis for concern, and the teacher and his students have wanted the findings to be communicated to those who were in policy-making roles. It becomes clear at this meeting that the students' research is not likely to be given very much credence or attention. The two network members are quite vocal at these meetings. In fact, they request that the next meeting be held at the site of another network member (in the regional education services center) who is interested in more meaningful ties between county schools and county environmental programs.

5. January 5, 1976. S. R. meets with a faculty member from the local community college who was at the last public meeting, in order to discuss possible ways her students could get involved in network programs.

6. January 14. At this public meeting at the regional education services center, A. A. is elected to the policy board of the county water quality program. He begins to see that, in addition to research, there are other important ways in which one can make a difference, and other ways for his students to profit from participation in this program.

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*The description of this network is taken from Sarason (1977, p. 29-33)

7. January 22. The county water quality program has a special task that needs to be done. S. R. takes the initiative and arranges a semester-long work-study program for a high school senior from a local school district. (This works out so well that S. R. was asked to make similar arrangements for 1976-1977.)

8. January 28. At this public meeting, A. A. and S. R. are elected to the citizen advisory council. Plans are discussed on how to bring together students and citizens on a more local basis, in order to focus more effectively on local concerns.

9. February 11. At this first local meeting (chaired by S. R.), there are a number of local citizens in addition to A. A. and his students. This is the beginning of a deliberate effort by A. A. to involve and expose students to the nature, purposes, opportunities, and dilemmas of citizen participation.

10. April, May, June. In each of these months, citizens and students hold local meetings. Four things characterize these meetings: articulate citizen discontent about their roles in existing practices and programs, discussion of professional research contracted for by citizen groups, how to involve more citizens, and how to become a force to be reckoned with. The proceedings of these meetings are always discussed by A. A. in his classes. Ways are sought whereby A. A. and his students could obtain, in conjunction with a somewhat distant but interested state university, more sophisticated water-monitoring equipment in the hope of making the findings of the student research more credible to the policy makers.

11. May 25. A sophomore from one of the state universities, who is also an Essex resident, seeks to do an internship with the county water quality research program. This has come about because earlier that year S. R. has established contact through a mutual friend with a member of that university's environmental science faculty. S. R. had told this faculty member about the interest of the Essex network in environmental issues, and so, when he learned about the student's interests and residence, he had her arrange a meeting with S. R. The internship is satisfactorily arranged.

At the same time that the activities described were going on, other network members were involved with other individuals and agencies about environmental matters.

1. November 1. Three members of an independent graduate .college of education who were part of the Essex network have described the network and its interests to a faculty colleague whose main interest was using the environment as a vehicle for integrative education for teachers and students. This colleague has called a network coordinator to request a meeting to discuss two items: his interest in and responsibility for the use of one section of a large state park for educational purposes, and the possibility that more of the county's school districts could become part of the effort.

2. November 6. A meeting is held. Attending are the faculty member, several network members, and a director of a local land conservancy center. The decision is made to contact the supervisor of regional educational services, B. B., to enlist his interest and support. A network member who serves on the board of that institution contacts him and arranges the meeting.

3. December 12. Attending the meeting are B. B., the regional supervisor, his chief aides in environmental studies, representatives of several school districts (one of them a network member), a representative of a federally supported national program in environmental education located in the county, a network coordinator, and the faculty member from the graduate college of education. The focus of the meeting is on the quality of facilities in the particular section of the state park: its potential as an educational meeting and demonstration site. Everyone agrees that the site seems to present an unusual opportunity to meet multiple educational needs.

4. January 21, 1976. Three of the people from the December 12 meeting make a site visit to the section of the state park. The visit confirms the conclusion that the site has many possibilities and that as many school districts as possible should be drawn in.

5. May 14. The school district representative at the December 12 meeting, who is a network member, and a group of school principals from his district visit the site. The decision is made to involve a number of teachers in the program at the site for the coming summer. The program would be (among other things) under the leadership of the college faculty and would be available to teachers who already are involved in environmental approaches to education or to those who are not but wish to learn more about this approach in order to bring it meaningfully into their classrooms.

6. June 3. A group of teachers interested in the program visit the site.

7. June 22. Volunteer teachers (citizens with special interests and expertise) in the Essex elementary schools who teach conservation arrange to visit the site.

8. July. Fourteen teachers begin the course at the site. They will receive graduate credit in the graduate college of education, with no payment of tuition.

This description is only a skeleton and was not intended to illustrate complex details of the genesis of the Essex network or its organization. The description does illustrate the unfolding and almost ad hoc nature of the network. It does give the reader some feel for the type of activities engaged in by RELS-like networks and the wide variety of people and agencies that are brought into working contact with one another.

Alabama Environmental Quality Association

Our second example of a RELS-like network is the Alabama Environmental Quality Association (AEQA). The AEQA is a state-wide network of citizens that grew out of the work of the Alabama Farm Bureau Federation. This case illustrates how small beginnings with a single issue effort can evolve into an effective state-wide program of environmental education.

History of the Alabama Environmental Quality Association

In the late 1960's a group of Alabama citizens, concerned about the state's future, started an environmental program in an attempt to insure that economic development and growth of the state would be compatible with a high quality of life. Garbage and litter, especially in rural areas, was the group's immediate concern. To focus attention on the litter problem, the Alabama Farm Bureau Federation declared a Rural Cleanup Week. A highly successful cleanup campaign took place throughout Alabama; it was supported by many county officials, newspapers, and civic organizations.

Despite the success of the cleanup campaign, trash soon began to reappear along the roadsides. In rural areas, the problem seemed to be due to a lack of convenient methods for disposing of household garbage. To help solve this problem, the state passed a solid waste disposal law. The Alabama Farm Bureau Federation also started a Rural Cleanup Advisory Committee to begin an educational campaign to discourage people from littering.

The educational program soon expanded to include urban as well as rural areas, since litter was a problem everywhere. More significantly, the program expanded beyond cleanup and beautification campaigns to include broader environmental problems, such as air and water pollution and land degradation. This expansion is reflected in the change of the organization's name in 1973 to the Alabama Environmental Quality Association.

Programs of the Alabama Environmental Quality Association

The Alabama Environmental Quality Association (AEQA) brings together citizens, industrialists, universities, public health departments, state agencies, and many others to teach the people of Alabama about environmental problems and to get them involved in solving those problems. To do this the Association carries out a variety of programs: seminars, environmental resource fairs, speakers bureau, film library, information clearinghouse, trails promotion, and publications.

The Association sponsors public seminars on environmental issues of state-wide interest. For example, in 1975 strip mining had become a much debated topic in Alabama, so the Alabama Environmental Quality Association sponsored a public seminar on strip mining. The event brought together environmentalists and industrialists to voice their opinions, to discover their common beliefs, and to share information that citizens could use to determine the kind of strip mining regulations needed by Alabama.

Environmental resource fairs are regional gatherings to inform citizens of the resources available at the local level to improve the community's environment. The Association operates an environmental speakers bureau composed of experts whose knowledge spans a variety of subjects, from recycling to outdoor recreation. The film library makes available environmental films to schools, youth groups, civic and service clubs, and others. Many films stress the importance of citizen involvement in decisions that affect the air, earth and water. The organization reaches many people through its information clearinghouse service, which helps with specific problems on an individual basis. In the area of trails promotion, the AEQA organized the Bartram Trail Conference, a web of citizens and representatives of government agencies who are now working to develop the trail and eventually oversee its maintenance.

One of the Alabama Environmental Quality Association's most effective environmental education tools is its publications program. A monthly, four-page newsletter reports on environmental issues affecting both the state and nation, and provides updates on the work and accomplishments of AEQA. Some of the other publications developed by the Association deal with recycling, strip mining, and community improvement programs.

Citizens League

The Citizens League of the Twin Cities area in Minnesota is concerned about environmental education in its widest sense, the quality of human life in a region. The Citizens League illustrates a process of regional problem-solving and policy-making, or what we call collective inquiry and action in later chapters of this manual. Collective inquiry is one of the striking characteristics of RELS-like entities. The Citizens League helps illustrate the evolutionary nature of RELS' growth -- how new modes of collective inquiry are attempted and refined and the ineffective ones are replaced.

Background and History

The Citizens League strives to address regional issues before they become crises by fostering citizen research and education. The result is an annual research program focused on approximately six community issues. League members serve on volunteer study committees, and produce a list of recommendations. Over the years, these objective, nonpartisan reports have been among the most reliable sources of information for government and community leaders, and others concerned with the problems of the Minneapolis-St. Paul region.

The Citizens League began in 1952 as a nonprofit, educational corporation. As the Twin Cities area developed more advanced and complex institutions in the 1940's, leadership passed to a younger generation. For about 10 years, these new leaders met informally to discuss community issues and what should be done about them. They were organized only loosely in a network, without a staff. Then, in 1952, three local firms offered funding of $30,000 a year for three years, and the League was officially underway.

A Focus on Issues

Although the structures and procedures of the organization have evolved over the years, the central concept has remained constant. The mission of the Citizens League is to help the community and government of the Minneapolis-St. Paul area to achieve a better understanding of the issues that will affect them. Very simply, this means interrupting the usual cycle in which events are allowed to become crises and the community is forced to respond in a reactive way. Instead, the Citizens League tries to:

1. identify forces that might have an impact,
2. describe the "problem" in a neutral way, and
3. suggest early actions for decision-makers to take.

This removes the partisan and political elements from the way public issues are handled. In the Twin Cities area, much of the issue-raising function is carried out by a nonprofit, independent institution. The expense, covered by the private sector, is considered worth the investment.

In the early years, most League activities could be categorized as reacting to proposals initiated by local officials. The League offered information on referendums, as well as reviewed and rated candidates for public office. The latter proved difficult to do credibly and was soon dropped. In 1962, the League chose a new role for itself when it went beyond critiquing a school board proposal and offered its own recommendations for a school replacement program. A new proposal was prepared and passed, with League support. Thus, the League had evolved to a point where it recognized the importance of timing and leverage in addressing public issues. The new role was to generate ideas as well as critique them, and to watch for signs of trouble or changes that might call for adjustments.

The Process Used by the Citizens League

Each year the Citizens League selects five or six issues for study by League committees. For example, in 1979 the League studied the financing of metropolitan parks, school desegregation, local tax economy, youth athletics and chemical dependencies. From as many as possibly 200 topics at the start, a Program Committee prepares a list of issues it recommends the Board of Directors consider. Some of the criteria used are: importance, urgency, cost-benefit, emotion, and interest. The list of issues takes about four months to compile. When the Board approves a topic for study, it assigns the issue to a committee of League members. Participation on the committees is open and voluntary, but monitored so that an objective balance can be maintained.

With support services provided by the League staff (e.g., meeting arrangements, minutes, scheduling resource people, etc.), the committees have a six-month period to research their issues. Then it takes another three to four months for the committee to debate the issue and arrive at a consensus about what the proposal should include. During this time the League encourages the committees to keep in close contact with the community and the League Board of Directors, so that committee members maintain a realism about the status of the issues. Finally, each committee submits to the Board a report that includes background on the issue, findings (i.e., facts about the issues in controversy), conclusions, and recommendations.

The Board of Directors usually approves or slightly modifies, but seldom rejects, committee reports. Approval is required before reports become official Citizens League policy and are released to the public; the Board then assumes full responsibility for the reports. At this time, the study committee officially disbands, although some members may be asked to help explain the report to the community. The Citizens League uses a number of channels to communicate the reports, including a wide distribution of study committee minutes; sending early copies of the full report to 100 key people; mailing another 1,000 to 3,000 copies; a summary in the Citizens League News; close work with newspapers and television; public breakfasts; and oral presentations. The Citizens League cannot implement its own recommendations. Instead, it serves as a consultant to the community, and relies on its past performance to build public confidence in its credibility and judgment.

Organization of the League

Today there are approximately 3,000 individual members in the Citizens League. Funding is provided by membership dues and contributions from some 600 business firms, foundations, and nonprofit organizations. The League is especially careful to maintain a support structure that is small and flexible but maximizes the use of volunteer time. Most citizen volunteer time is spent working on the issues. Members also elect the twenty-four directors who are responsible for guiding the policies of the League. Operations, issue identification, and strategic planning for the organization are handled by three standing committees. While League meetings are held throughout the region, there is a central office in downtown Minneapolis. There, an executive director heads a small office staff, which provides the Board of Directors and the members with supportive services -- coordinating records, membership, research, newsletters, and requests for information, etc.

Little Tennessee Valley Educational Cooperative

Our fourth example illustrates that RELS can be initiated as a part of other projects and may last beyond these projects themselves.

Background on the LTVEC

The Little Tennessee Valley Educational Cooperative (LTVEC) can trace its beginnings to an idea for a "model city" associated with the Tellico Dam project in Tennessee. The creation of the Tellico Reservoir on the Little Tennessee River offered the region not only additional flood control, navigation, power production, and recreation, but also an opportunity to develop a new community with its own economic and cultural base. When the project began, local officials and residents of the three counties directly affected by the dam began working together to insure that development of the reservoir shoreland would make the maximum contribution to the economy of their region. The

Tellico Area Planning Council was the result of joint efforts of the Tennessee Valley Authority, the Tennessee State Planning Office, and the East Tennessee Development District.

Meanwhile, the Tennessee Valley Authority, the University of Tennessee, and a number of school districts working together, envisioned a sort of "human services center" as part of that model city. Although the model city itself did not develop as planned, the LTVEC carries out that part of the ideal that called for meeting educational needs on a regional basis. Today the cooperative offers a wide variety of services that are characterized by a holistic attitude toward education and a concern for regional development.

A Holistic Approach to Education

Seven school districts contribute funding to the LTVEC. Each district thus "owns" a share of the cooperative and makes use of the services it could not afford alone. These include:

- educational and psychological evaluation of students,
- placement and counseling coordinated with the parents, teachers and community,
- programs for gifted children,
- speech and hearing services,
- cooperative purchasing, and
- an environmental education project that addresses the problem of transforming environmental information into educator behavior.

This last project helps illustrate the approach to education that guides the LTVEC. The overall objective of this project is to integrate environmental information into the professional and personal lives of selected high school teachers and administrators. In turn, their new perceptions and individual understandings should affect their professional and personal behavior and lead to appropriate curriculum changes. This objective is being addressed through a two-part effort. First, experts present environmental information to the educators. Then, through a small group approach, the educators are assisted in integrating that information into their own perceptions. The hypothesis is that, once this is accomplished, the educators will initiate curriculum adjustments to incorporate the newly acquired insights into their normal subject matter.

Like many LTVEC efforts, this project is sponsored with outside funding -- in this case a grant from the Federal Office of Environmental Education. The cooperative operates with a staff of about twenty people; students from the University of Tennessee are involved on a part-time basis. Although the Tennessee Valley Authority is no longer involved in the effort that once pictured a "model city" in the area, the school districts have assumed responsibility for meeting their regional needs through the LTVEC.

RELS: A New Institutional Form

After reading the descriptions of a number of organizations that illustrate RELS-like qualities, you may ask if there are really any similarities between them. For instance, these "Regional Environmental Learning Systems" show a wide range of scope or domain. The examples of RELS given in this chapter cover a single state, an urban region, and a group of school districts. They also deal with a variety of issues -- in one instance, with a question of water quality, relevant student research, and citizen participation; in another instance, with organizing environmental information so it can be effectively used in the school curriculum. Sometimes the financial resources to support the RELS come from the Federal government; at other times, from the private sector.

RELS are new institutional entities that have arisen in response to a new situation that presents a new set of demands. The common characteristics of RELS can be understood by: 1) examining the new demands that are made on the institutions of governance and education by the rise of environmental issues, 2) examining why the traditional institutions of governance and education have not been responsive to these new demands, and 3) examining why RELS-like entities have been successful in meeting these new demands. We will see that a RELS is an institutional entity that has arisen within a region to complement the traditional institutions of governance and education. Working together within a region, these institutions are able to effectively work at the resolution of the environmental issues and educate people to effectively participate in the resolution of these issues.

A New Situation with New Demands

Over the last ten to fifteen years, we have seen in the United States a rapid increase of environmental problems and issues. This has put new demands on our traditional structures of governance and education. We examine this new situation and its demands in this section.

A New Situation

We are all familiar with the growing list of environmental concerns. They include: the rapid growth of population and urban areas, increased industrialization, increasing energy usage, and the exploitation of the natural environment. Air and water pollution abound in many parts of the country. Environmentally induced illnesses, such as certain types of cancer, are on the rise in urban areas with high air pollution. Soil erosion is undermining the productive capacity of the world's richest food system. The rise of these issues has presented new challenges to our structures of governance and education.

The issue of Kepone in the James River is a good example of a new situation and some of its new demands. Starting in November 1973, a small "factory" operating in an abandoned service station in Hopewell, Virginia, produced Kepone, which would be shipped abroad to kill ants. While it was illegal to sell the Kepone in the United States, it was not illegal to make it. After a few weeks, workers who were making the Kepone began to notice that they were having the "shakes" and suffering other nervous discomforts. Eventually it came to light that the Kepone was responsible and, in July 1975, the Virginia Department of Health ordered the plant to stop manufacturing the chemical. On the surface, this seemed to be a local issue involving the health of a few people making a chemical in a small plant that had failed to observe the most rudimentary precautions.

Later it was discovered that large quantities of waste material from this plant had been dumped into the James River, and the fish in the James contained the Kepone in amounts much greater than the Federal limits for human consumption. The governor of Virginia then placed a ban on fishing in the James River along the affected area. The issue was no longer a local one; it began to affect people outside the immediate Hopewell area.

The Components of Issue Resolution*

The James River example is useful in studying something common to all environmental issues, i.e., the underlying components of every environmental issues. Knowledge of these components helps illustrate the new demands that environmental issues place on institutions of government and education.

The first component in issue resolution is the group of stakeholders and decision-makers. A stakeholder is any person or group that has a "stake" in or stands to lose or benefit from the resolution of a particular issue. In the James River example, there are the workers in the factory that suffered from nervous disorders; there are the fishermen utilizing the James River, who no longer could fish; there are the service industries which supported these fishermen; and there is, potentially, anyone who is affected by the economy of the river basin. A decision-maker is a person or group who has some influence on how the issue is resolved. In the James River example, there are courts of law; the government agencies concerned with health, water resources, economic development; and the association of fishermen who use the James River.

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*The components of issue resolution are based on the work of Ackoff (1974, 1979). Although the language is different, the same structure appears in Argyris and Schon (1974, 1978).

Secondly, there are the desired outcomes that would result if the issue were properly resolved. Different stakeholders and different decision-makers usually have different desired outcomes. The company manufacturing the Kepone would like to pay minimum punitive damages. Fishermen would like to regain the use of the fishing grounds, and the state agencies would like to insure the continued financial viability of the region as well as the continued good health of those eating fish from the James River. A major question in the resolution of an environmental issue is: "What state of affairs would occur if we successfully resolve this environmental issue?" The answer to this question defines the desired outcomes.

The third component of issue resolution is the courses of action available to the decision-maker. The courses of action are those variables in the system that can be controlled by the decision-maker. Some of the controllable variables in the James River example would be the regulation of Kepone production, the restriction of fishing, and the dredging of silt from the river. These courses of action represent the interventions or the changes that a decision-maker can use to realize the desired outcomes. A second major question in the resolution of environmental issues is: "What are the potential activities that we could implement to accomplish the desired outcomes?" The answer to this question defines the alternative courses of action.

Situational factors, those variables that are uncontrollable by the decision-maker, represent the fourth major element of issue resolution. In the James River example, international trade regulations and the dynamics of silt movement would be factors that decision-makers are, most likely, not able to control. The identification of situational factors allows a decision-maker to understand which factors constrain or influence the implementation of particular courses of action and eventually the realization of desired outcomes. Hence, a third major question in the resolution of environmental issues is: "What factors beyond our control constrain or influence what we want to do?" The answer to this question defines the situational factors.

The fifth element of issue resolution is the mediating relationships among the previous factors. These mediating relationships represent decision-makers' beliefs about how the courses of action (controllable variables), situational factors (uncontrollable variables), and desired outcomes are related to one another. In their simplest form, these mediating relationships can be stated in the form of simple hypotheses. In the James River example, we might have, "If the products of Kepone production had been confined to the factory, then stopping the production of Kepone should remove all the health hazards." In almost all issues of importance, the mediating relationships are much more complex; they are usually several linked hypotheses. The fourth, and perhaps most difficult, question in the resolution of environmental issues is: "What are our beliefs or assumptions about how outcomes are influenced by the alternative courses of action and the situational factors?" The answer to the question defines the mediating relationships of issue resolution.

Figure 2.1 illustrates the structure of relationships among these components. In addressing and attempting to resolve an environmental issue, stakeholders and decision-makers must have at least a tacit or mental model of what the issue involves and how the parts are related. Rational argument in favor of a particular approach to resolving the issue must be based on identification of the four components:

- desired outcomes: ideals, goals, and objectives
- courses of action: controllable variables
- situational factors: uncontrollable variables
- mediating relationships: our beliefs or assumptions about how outcomes are influenced by courses of action and situational factors

New Demands

The rise of environmental problems and issues presents several new demands to civic leaders, government officials, educators, and citizens. The components of environmental issue resolution developed above help us understand these demands. Among the most

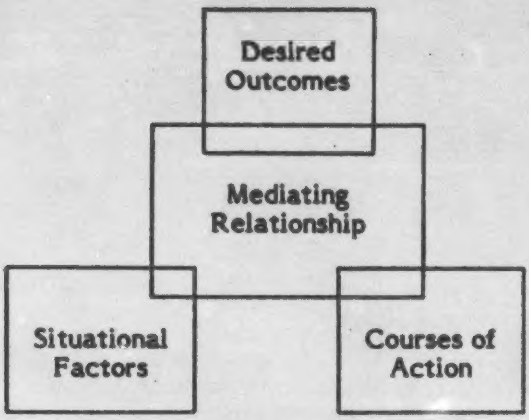

Figure 2.1: Structure of Issue Resolution

important of these demands are: 1) the demand for wide participation, 2) the demand for higher levels of information processing in collective inquiry, and 3) the demand for sharing scarce resources.

The Demand for Wide Participation. The impact of decisions is seldom limited to one geographical area anymore. In the James River example, it is clear that decisions taken at one location have outcomes which affect persons living elsewhere, and who are often uninformed of these decisions. James River fishermen were not aware that Kepone production threatened their livelihood, and the Chesapeake Bay oyster growers played no role in the production of Kepone.

The first new demand posed by the increase of environmental issues is that the resolution of these issues requires the involvement of persons and groups from different agencies, and different political jurisdictions, as well as a wide range of citizens. In the past, a large number of problems could be handled by a single, local jurisdiction, since both the cause of the problem and its major consequences were contained in that geographical jurisdiction. The environmental issues of today are of a different type; the cause and the consequences of the problem are often separated in geography and in time. The resolution of environmental issues requires the cooperative efforts of a wide variety of persons and groups.

The Demand for Higher Levels of Information Processing. The problem of Kepone in the James River happened in a rather sudden and dramatic fashion. It would have been difficult to anticipate this occurrence. Once the problem of Kepone was recognized, it required a quick response. Past assumptions and plans were no longer valid and had to be changed. Much new information had to be generated and assembled into the coherent framework needed to respond to this problem.

A large amount of uncertainty faces a decision-maker when he or she attempts to resolve an environmental issue. The sources of this uncertainty are multiple; environmental issues are complex, ill-structured, and value-laden. An environmental issue may allow a wide variety of desired outcomes, multiple courses of action (variables that can be controlled by the decision-maker), and many situational factors (variables that cannot be controlled by the decision-maker). To resolve the issue of Kepone in the James River, a wide variety of roles and responsibilities had to be considered. The decision-makers had to consider such outcomes as toxic levels in fish, the health of the Kepone production workers, and the fishing economy in the estuary. There were also many courses of action and a large variety of situational factors to be considered in resolving this issue.

Not only are the elements in the resolution of an environmental issue complex, but they are also ill-structured and fuzzy. The elements in the issue resolution are often obscure or hidden. Great effort must be expended on the part of the decision-maker to discover the outcomes, the courses of action, and the situational factors. Usually none of these are self-evident. Once the elements are discovered, the relationships among them are also often hard to discern. We are constantly searching for appropriate hypotheses to structure environmental issues. Even after the effects of the Kepone dump on the fish of the James River were discovered, it took some time to realize that the oyster beds in the Chesapeake Bay were in danger. The linking mechanism was the affinity of the chemicals with the top layer of silt, which is moving towards the Chesapeake Bay. In addressing environmental issues, decision-makers often find that they do not know or have only a fuzzy knowledge about the major elements of the issue and the how they are all related.

Environmental issues are value-laden. Each of the parties involved in the Kepone issue viewed it from a different perspective. Each contributed to a conflicting set of outcomes. The manufacturer of Kepone wanted to get a high profit and a quick bale-out from production operation. The Chesapeake Bay oyster fishermen were concerned that Kepone may seriously disrupt or destroy their means of livelihood. Taxpayers are ultimately concerned about the economic cost of cleaning up this catastrophe. The value-laden character of environmental issue resolution often means that the exchange of information between the parties involved is filled with conflict.

The dynamic quality of environmental issues -- their complexity, their "fuzziness," as well as their highly controversial nature -- all contribute to the high levels of uncertainty in the resolution of environmental issues. To resolve environmental issues with these high levels of uncertainty requires that a number of ideas must be generated, clarified, structured, debated, evaluated, and restructured. Hence, there is a demand to create, invent, and discover new ways to manage the increased information required to resolve environmental issues.

The Demand for Sharing Scarce Resources. The third major demand posed by the rise of environmental issues is the need to share scarce resources. Obviously, environmental problems would be easier to cope with if there were unlimited natural, human, and economic resources. Yet, we have become profoundly aware that we live in an age of "limited resources." As each political jurisdiction, specialized agency, or citizens group comes up against the realization that the resources available to it fall far short of the needs that are generated by the environmental problems it hopes to address, there will be a need to find more effective ways to share scarce resources.

The Failure of Traditional Institutional Forms

The rise of environmental issues has presented new demands to our traditional institutions of governance and education -- the demand to involve multiple parties in resolving environmental issues, the need for higher levels of information processing, and the need to share scarce resources. Yet, for the most part, our traditional institutions have not been able to meet the challenge of these new demands.

Our present institutions of governance have evolved hierarchically by geographical jurisdiction. Local jurisdictions make the first attempt to deal with most problems. Problems that cannot be handled by the local jurisdictions are handled at the state level. Problems that cannot be handled by state jurisdictions are referred to Federal jurisdictions. Although this characterization is greatly simplified, it does capture the major structural principles of our American institutions of governance.

The system works well under several conditions. First of all, it works well when most of the problems can be handled at the local level. If this is so, then only a small number of problems and issues have to be referred upward. When there are a small number of problems, they can easily be accommodated by the next highest political jurisdiction. Secondly, the system works well when the authority given to each jurisdiction matches the kind of problems that occur within its geographical boundaries. This hierarchical structure of governance has evolved to minimize the cost of coordinating different political jurisdictions.

Under those circumstances, the hierarchical structures or communication channels work very well. However, with the rise of environmental problems and issues, the assumptions under which the channels evolved are no longer as valid as they once were. Most problems can no longer be settled at the local level. They require the coordination of several jurisdictions; using the hierarchy for referring the problems up to the next highest jurisdiction overloads that part of our governing institutions. As the number of issues referred upward increases, the next highest political jurisdiction is faced with many more issues than it was designed to effectively handle; hence, overload and breakdown.

The symptoms of these overloads are familiar to all of us. The number of issues urgently awaiting action by the next highest jurisdiction pile up. Bureaucracy sets in. Large programs with large amounts of money are developed by these higher jurisdictions, but they have little impact on the real problem. Multiple conflicting regulations are generated, delays are compounded, and the process of communication bogs down.

Initial reaction to the major environmental issues that have emerged in the last ten to fifteen years has been to develop fragmented, legislative programs that proliferate projects and dollars. After spending a great deal of money and achieving minimal results, this response has been shown to be inadequate. In times of spiraling inflation and economic slowdown, the effectiveness of traditional governmental responses has been limited by the lack of resources.

At the same time, we see the rise of special influence groups. These groups have chosen to influence the governance process so that their interests are accounted for in the process of issue resolution. Unfortunately, the special interest groups oftentimes put their own interests before the interests of the greater or common good. Over the last decade we have seen our institutions of governance fragmented through the politics of selfishness.

Our institutions of education are also affected by the rise of environmental issues. If citizens must be able to participate in governance with enlightened goodwill, then the fundamental task of educators is to cultivate and firmly implant this in the body of its citizens. Citizens of enlightened goodwill must have a knowledge of the issues confronting society and the ability to appreciate how these issues are interrelated and interwoven. People need the capacity to analyze issues and to arrive at positions that promote the general welfare of society.

Our institutions of education at all levels have not adequately met the challenge of encouraging enlightened goodwill in citizens in this age of increasing complexity. Students are not challenged to reason at more complex and abstract levels and to come to grips with complexities of our modern society. Students are not given a value framework that allows them to transcend their personal interests so that they can work towards the resolution of issues, in turn working toward the good of the whole. Hence, today's students are poorly prepared to effectively participate in the structures of governance. Without citizens of enlightened goodwill, our democratic society will not be effective nor will it endure in the future.

RELS: A New Institutional Form

The RELS-like entities that we described in the earlier part of this chapter and others like them have emerged to meet the new demands environmental issues place on traditional structures of governance and education. RELS is an institutional form which complements the normal governance and educational institutions of a region.

A Regional Environmental Learning System is people, in communities and schools, organized to address environmental themes or issues. The participants believe that more learning about environmental issues will have an impact on the future development of their region. They also believe: 1) that present school curricula and community institutional arrangements are not adequate for completely addressing these issues and 2) that new approaches through networks must be taken to improve the way issues are understood and resolved. Common to these new approaches is a process of collective inquiry and action, which brings together a diversity of individuals from the community, from school systems, and from community agencies. Through this process of collective inquiry and action, RELS participants study important regional environmental themes and issues, and oftentimes develop environmental policies and programs of action to address these themes and issues. Key decision-makers in the region are influenced by the RELS participants to implement these policies and programs of action. RELS participants forge new cooperative arrangements, which expand and mobilize the resources needed to undertake this process of collective inquiry and action. RELS is an organizational setting where learning about the environment comes simultaneously with creating a more human environment.

This definition fits large and small RELS. In each of our four examples -- the Essex Network, the Alabama Environmental Quality Association, the Citizens League, and the Little Tennessee Valley Educational Cooperative -- we see the essential ingredients. People from a diversity of settings come together in collective inquiry and action to address regional environmental issues. This definition includes both the formal sector and the community education sector of environmental education. For example, educators at a high school working with a local university and the Environmental Protection Agency to design a new environmental curriculum would fit this definition of a RELS. In the same way, a community group that is organized to preserve the forest lands of a northern state also would fit the definition. The definition given above fits a wide variety of environmental education efforts, which we call RELS.

Characteristics of a RELS

The networks we call RELS share certain common characteristics, which we briefly summarize below. These characteristics will be developed into more explicit models in Chapter 3.

A RELS Defines Regions to Match Problems with Resources

The definition of region in RELS is a flexible concept. It could be several counties around a major urban area or it could be so large as to include several states. The region is chosen so that the participants have the capacity to match problems and opportunities with the available resources. In most cases, there is not unified regional government or a capacity for focused representation, skilled research, organized decision-making, or adequate regional policy dialogue.

A regional perspective affords a large number of opportunities. It allows people the opportunity to consider the long-range impacts of issues and of current actions, as well as the opportunity to match the scale of the decision process to the real scale of problems. The regional perspective allows us to create integrated solutions to problems such as transportation, housing, water, waste disposal, energy and land use; it gives us a framework to think about the economic and social impacts of changing the physical infrastructure of the region.

A RELS Engages in a Process of Collective Inquiry and Action

RELS responds to the pressure for new structures of communicating and decision-making by organizing people from diverse organizational settings into a process of collective inquiry. RELS represents a new structure or channel of communication where ideas can be generated, organized, expressed, portrayed, shared, confronted, and evaluated. Issues and problems are continually studied and refined. Special studies, debates, and discussions are utilized to create and evaluate solutions to environmental issues and problems. Action plans involving diverse people and groups are developed, implemented, and evaluated. Reports on these studies, debates, and action plans document the shared understandings that RELS members have on environmental issues. Actions taken individually and collectively by the RELS members mobilize the resources needed to implement the policies and programs of action. In summary, this process of collective inquiry enables RELS members:

- to generate valid and useful information about environmental issues;
- to organize this information into models or maps that reflect their shared understandings of these issues;
- to create, choose, and implement policies and programs of action that resolve these issues;
- to mobilize the commitment of resources -- that is, the people, money and facilities that enable these policies and programs of action to be implemented;

- to evaluate these policies and programs of action so that the members can confirm, refine, or correct their understandings of the environmental issues; and

- to improve their skills in carrying out all the above processes.

This process of collective inquiry and action provides a means to resolve environmental issues at the place where information on issues and the power to act reside. The probability that issues will be more effectively addressed and resolved is greatly enhanced.

A RELS Is a Network of Social Transformation

RELS are formed by linkages within and between organizations. These linkages create networks of people and resources. The purpose of the networks is to bring about a social transformation -- creating new approaches for resolving environmental issues. The networks link together the people and organizations responsible for decision-making, leadership, and action. They have broad-based support from a "critical mass" of people, groups, and organizations in the region. The opening of new channels of communication and decision-making within and between organizations enhances the capacity of RELS to engage in collective inquiry. This improves the ability of RELS participants to set common goals, to coordinate activities toward these common goals, to share scarce resources, and to increase the adaptability of institutions and structures in the region.

A RELS Develops Its Members

Not only do RELS mobilize external resources to implement new policies or programs of action, but they also develop their internal resources. Leaders emerge to activate and sustain the RELS. The leadership group organizes and coordinates the collective inquiry and network building of the RELS. Effective leadership is a necessary condition for an effective RELS.

RELS recruit new members and enhance their commitment to the common endeavor. As new issues evolve and develop, a RELS attracts new members because of their interest in a particular issue. In some cases, a member's interest broadens during participation in RELS, and he or she becomes interested in other issues being addressed. In other cases, people drift in and out of RELS, and deal only with issues that are of particular interest to them. In all cases, an effective RELS assists new members in grasping the nature of the issue under study and in developing the skills necessary to participate in collective inquiry.

A RELS Develops in an "Organic Evolutionary" Manner

RELS develops slowly, usually with a core group of people attempting to generate interest in a new approach for resolving regional environmental issues. This core group comes together for informal conversations and meetings. A minimal structure of roles (convener, idea developer, correspondent) emerges as the group carries out the task of generating interest.

The core group also mobilizes resources for an initial experiment in collective inquiry on a particular issue. A small staff may be hired to assist in researching the issue and providing a framework for discussion. Roles and processes evolve to meet specific needs and situations of the RELS.

If this initial experiment is well conceived, well executed, and has significant regional impact, then a momentum is begun which carries the RELS into a wider range of issues. If an effective collective inquiry process takes place, then the RELS begins to develop a more permanent structure (leadership committees, study committees, research staff, the resources to support this structure, and others).

Premature efforts to institutionalize RELS, with a complex set of roles and research staff, seem doomed to failure. Effective RELS unfold in an organic evolutionary manner through a series of organizational developments and phases. The mobilization of interest is required before a core group can initiate an experiment around a single issue. Success with the collective inquiry and action experiment is prerequisite to institutionalizing the process of collective inquiry. For RELS, the ultimate aim of this process is to address an interrelated set of environmental issues on a comprehensive basis.

Summary

In this chapter, you were introduced to the concept of RELS, a new mode of organizing that is emerging around the country to cope with critical environmental issues. Several examples of RELS were examined, and the underlying similarities identified. RELS exist where people from a diversity of political jurisdictions, organizations, and specialized agencies organize a process of collective inquiry and action that enables them to mobilize scarce resources needed to address regional environmental issues.

Chapter 3

RELS MODELS: A "STILL PICTURE" AND A "MOVING PICTURE"

Introduction

One of the ways to analyze the performance of a track and field athlete, such as a sprinter, shot putter, or a high jumper, is to take a moving picture of the athlete during his or her performance. By stopping the action at a critical number of points in the sequence, a "still picture" of the performance can be analyzed for its strengths or weaknesses. By running the "moving picture" in slow motion, the performance can be analyzed to see that all the critical movements of a performance blend together in a harmonious and synchronized manner. In this chapter, we develop both a "still picture" and a "moving picture" model of RELS. The "still picture" model will allow us to stop the action of a RELS at a particular point in its evolution and to analyze its strengths and weaknesses. The "moving picture" model will help us appreciate the evolutionary dynamics of RELS and the choices that are open to RELS members at critical points in its evolution. These models should help the reader deepen his or her appreciation of RELS as an organizational entity, and they also provide bases for creating new RELS and improving the performance of those that already exist.

A "Still Picture" Model of RELS

The examples of RELS described in Chapter 2 illustrate the diverse settings in which RELS occur, and the wide variety of environmental and educational issues they address. To develop a model which captures the essential qualities of RELS in these diverse settings, we must concentrate on abstract characteristics of the RELS. One common characteristic of a RELS, large or small, in a simple or a complex setting, is the process of collective inquiry and action. The "still picture" model attempts to capture the essential characteristics of this process.

In building the "still picture" model we first describe the component processes that make up the process of collective inquiry. We distinguish two sets of component processes -- the primary and secondary processes of collective inquiry. The primary processes enable the RELS members to address and resolve an important environmental issue. We identify and discuss four primary processes of collective inquiry -- dialogue, decision, action, and evaluation. The three secondary processes -- agenda setting, network building, and organizing -- support and facilitate the primary processes.

The second task in building the "still picture" model is to identify 1) the outcomes which distinguish effective from ineffective collective inquiry, 2) the decision variables and situational variables which have a strong influence on the outcomes, and 3) the mediating relationships which describe how decision variables and situational variables are related to outcomes. Decision variables are those aspects of the processes of collective inquiry and action that can be controlled by RELS members, and situational variables are those constraints under which the processes of collective inquiry must operate. The identification of outcomes, decision and situational variables, and important mediating relationships gives us an approach to designing an effective RELS.

The third major task in building the "still picture" model is to describe how the design framework described in Volume 2, You Create a Design, can be used in developing a RELS.

Collective Inquiry as Interacting Processes

In this section, collective inquiry is viewed as a social process or, more specifically, as a system of social processes. A process is a flow or stream of interrelated events that are moving toward some goal, purpose, or end. In a social process the events are usually human interactions and exchanges. These interactions and exchanges might include the solitary reflective inquiry of one individual, communications between persons, interactions among persons within a group, interactions between a person or a group and another group, and interactions of a person or a group with the aid of a machine or technology, such as in computer conferencing or in the use of the telephone.

Social processes are always in flux. The stream or flow of events indicates the dynamic nature of a process. There is an implied movement through time.

Many social processes are intentional; that is, there is some purposeful movement toward a chosen purpose or end. Social processes are often self-organizing or self-designing; events or human interactions at one point in time are conditioned by previous events and by the choices of participants at previous points in time.

The human interactions that constitute the social processes are not isolated or discrete human interactions. There is an interdependence among these human interactions. The interrelatedness of these human interactions denotes that human interaction A has some influence on human interaction B. For example, a subcommittee of the RELS may research a particular issue in depth, and then report at a later date to the total RELS membership. At this general membership meeting, the members may take specific action based on the recommendations of the subcommittee.

In developing the still picture model, collective inquiry is viewed as a system of related and interacting social processes. The following questions have guided our inquiry into these interacting processes:

- What are the component processes that are critical to effective collective inquiry?
- What are the purposes of each of these component processes?
- What are the critical events for each of these component processes?
- What are the important interrelationships among the component processes?

In the sections that follow we address each of these questions.

Collective Inquiry: Primary Processes

The RELS is a vehicle or instrument for collective inquiry on regional environmental issues. People join together in a RELS because they believe that joint action amplifies the long-term benefits or ameliorates the long-term costs of acting independently or in isolation. RELS exists because its participants feel that the best way to resolve environmental issues is through collective inquiry.

Each person comes to RELS with a "theory of action" about the environmental issue. All deliberate action to resolve environmental issues has a cognitive basis. Contained in our images and mental models are explicit or tacit ideas about:

- desired outcomes: the desired resolution of the issue,
- courses of action: the actions to resolve the issue,
- situational factors: factors that affect the resolution but are not controlled by the participants, and
- assumptions: beliefs about how outcomes are influenced by the courses of action and the situational factors.

These interrelated ideas that participants bring to the work of RELS represents a theory of action for the resolution of environmental issues.

One view of collective inquiry is to see it as the process by which people come to build a common theory of action out of their individual theories of action, and then utilize this common theory of action to take action to resolve the environmental issue. The primary processes describe how the RELS membership addresses a particular environmental issue through building common theories of action and taking action based on these common theories.

We distinguish two types of collective inquiry. In Type I collective inquiry, the participants agree on the desired outcomes, or resolution of the issue, and they agree that the present situation deviates from these desired outcomes. For example, a group of secondary teachers may agree that they wish to introduce environmental field experiences into the science curriculum. The present curriculum does not allow this desired outcome (field experiences), and present assumptions about the science curriculum, as well as strategies based on these assumptions, do not allow field experiences. The group of teachers must jointly search for a more adequate set of assumptions about why there is an issue and how it might be resolved. Then they must search for a course of action which is based on the new assumptions and allows field education to take place. We summarize the activities of Type I collective inquiry as follows:

1. Participants share a common expectation about the desired outcomes and perhaps need only to communicate and make concrete their expectations.
2. Participants are aware that there is a discrepancy between desired outcomes and the present situation.
3. Participants examine existing assumptions and courses of action based on these assumptions to determine the cause of the discrepancy.
4. Participants develop new assumptions and new courses of action that are more appropriate for accomplishing the desired outcomes in the given situation.
5. Participants implement the courses of action.
6. Participants evaluate and generalize the results that flow from these new actions.

In Type II collective inquiry there is not an initial agreement among the participants about the outcomes that will resolve an environmental issue. Yet they believe there is a need or a motivation to collaborate on the issue and to develop a consensus on the desired outcomes. For example, assume that an outer belt highway around a city has been planned. The Federal government will release the funds for the highway when there is a consensus among local governments that the highway should be built. The Center City government does not want the highway to be built unless there is a metropolitan tax sharing plan so that the city will get some of the benefits of the new developments around the highway. The suburban governments and local businesses want the highway built for regional progress. At the beginning of the collective inquiry shared expectations about desired outcomes are not held in common; these must be developed.

The major task of Type II collective inquiry is to develop a commonly held set of desired outcomes. This can be done in several ways: 1) by demonstrating the "synergy," or mutually enhancing nature, of the diverse objectives, 2) by agreeing to set new priorities among the diverse outcomes and to weigh their relative importance, and 3) by accepting the need to accomplish diverse and conflicting outcomes, and making a commitment to restructure present assumptions and associated actions so that these outcomes can be accomplished. In the example, it is possible to develop a strategy which ensures the tax base needed by the inner city for essential services, and at the same time, ensures the regional progress sought by the business community and the suburbs. Type II collective inquiry requires the negotiation of a common set of desired outcomes. After there is an agreement on outcomes, the inquiry proceeds in much the same way as a Type I collective inquiry. We summarize the activities of Type II collective inquiry as follows:

1. Participants have diverse expectations about desired outcomes, and a motivation to work together.
2. Participants develop shared expectations about desired outcomes through:
    - demonstrating the "synergistic" benefits of jointly pursuing diverse outcomes,
    - setting new priorities among the diverse outcomes and weighing the importance of these outcomes, and
    - accepting the need to accomplish diverse and conflicting outcomes and making a commitment to restructure present assumptions and associated actions.
3. Participants examine existing assumptions and courses of action to determine the barriers to realizing the desired outcomes.
4. Participants develop new assumptions and new courses of action which are more appropriate to accomplishing the desired outcomes in the given situation.
5. Participants implement the courses of action.
6. Participants evaluate and generalize the results that flow from these new actions.

This analysis of the two major types of collective inquiry reveals an underlying structure to the process of collective inquiry to resolve environmental issues. First, we can identify four primary processes of collective inquiry and the purpose of each. These primary processes are summarized as follows:

DIALOGUE	to build a shared framework of appreciation on the environmental issue
DECISION	to formulate a policy or choose a program of action that will resolve the environmental issue
ACTION	to implement the policy or program of action
EVALUATION	to learn through action

Secondly, each of these processes requires idea management to accomplish its purpose. By idea management, we mean the participants' efforts to generate, refine, elaborate, organize, critique, reorganize, and communicate ideas. Collective inquiry can be viewed as the management of ideas to accomplish the purposes of dialogue, decision, action, and evaluation.

In collective inquiry, there must be a dialogue aimed at developing a common understanding of the issue. Vague awareness of difficulties or opportunities must be clarified into an explicit problem or issue statement. Participants must clarify their understanding of desired outcomes and develop a description of the gap between these desired outcomes and the actual situation. Participants must examine their theory of action about the environmental issue, and identify causes of the discrepancy or barriers to realizing desired outcomes in the existing assumptions and courses of action that are held about the issue. Information must be collected and organized into a map or model, so that a common understanding of the environmental issue is held by all the members in the group.

Once the issue is understood, a decision must be made by the group on the appropriate policy or program of action that will address the issue in a satisfactory manner. The participants develop new assumptions and new courses of action which are more appropriate to accomplishing the desired outcomes in a given situation. Designing a response requires creativity to generate alternative policies and programs, critical thinking to anticipate and examine the consequences of each of these alternatives, and prudent judgment to choose the appropriate alternative.

If decisions are to be effective, then action must follow. Decisions must be followed by actions that are coordinated and unified. The group must be organized in such a way that it can carry out the program of action.

During the implementation of a policy or program, and as the program is completed, it must be evaluated. As information is collected, organized, and evaluated, the group is able to refine and extend its understanding of the issue and the policy or program designed to resolve the issue.

The primary processes of dialogue, decision, action, and evaluation can be utilized on any particular environmental issue, no matter how large or small this issue, and no matter how complex or simple the setting. A more detailed road map of these primary processes is given in Chapter 4.

Collective Inquiry: Secondary Processes

The primary processes of dialogue, decision, action, and evaluation are supported by three secondary processes. The purpose of the secondary processes is to provide answers to the following questions:

- What environmental issue should be addressed?
- How will we acquire and manage the necessary resources?
- How will we organize ourselves and accomplish the policy or program of action?

Agenda-Setting. Agenda-setting is the process by which the RELS decides what environmental issues it is going to address. The agenda-setting process addresses such questions as, "How does the RELS decide what issues to discuss, at what time?" and "What is the most effective sequence in which issues should be treated?" These questions, and several others, are answered at least explicitly during the agenda-setting process. An examination of RELS-like entities suggest that their agenda-setting behavior can be classified into one of three types: 1) the incrementalist approach, 2) the rationalistic

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approach, and 3) the mixed scanning approach. These categories will be helpful in designing effective RELS agenda-setting processes.

The advocates of the incrementalist approach often claim that we know very little about the future, and hence have little control over it. They claim that long-term goal setting is futile; the only thing that we can count on in the future is that our goals will change. Flexibility is the best guard against the unpredictable future. The incrementalist is a pessimist about our chances of significantly resolving long-term environmental issues.

According to the incrementalist, the RELS would work best if:

- instead of attempting comprehensive approaches to environmental policy, RELS examined only those policies which differ incrementally from the present;
- only a relatively small number of policy alternatives are considered;
- for each alternative, only a restricted number of "important" consequences are evaluated; and
- a more remedial and practical approach is taken to resolving issues, rather than looking at the long-term societal goals.

The incrementalist approach, or "muddling through" as it is often called, is a reactive approach. It addresses environmental issues as they become crises. Most often this approach deals with immediate concerns and is short-term in its time perspective. Often it is oriented to that part of the regional system that looks at issues in isolation. A RELS that works from an incrementalist approach will have very few, if any, issues on its long-term agenda.

While the incrementalist is a pessimist in his or her approach to change, the rationalist is an optimist. The rationalist is convinced that we can come to know the future, and that we can use this knowledge to create a better society if we are willing to use the best capacities of the human person. It is possible to set a long-term set of goals, and to formulate and implement the strategies and tactics needed to realize these goals.

The rationalist stresses the necessity of addressing regional environmental issues in terms of systems. It is important to understand the critical interdependencies among the components of the regional system, such as energy, transportation, and human settlements. Properly grasped, this systematic quality of the region allows one to think about rationally designing the regional environment.

The rationalistic approach insists on the necessity of using a long-term perspective to embed one's plans for the immediate and short-term perspective. Hence, long-term regional environmental goals should determine yearly and monthly objectives. A short-term agenda of the RELS is always embedded in the long-term agenda.

The rationalistic approach to dealing with long-term environmental issues demands a great deal of technical expertise to synthesize information, trends, options, and strategies. It also requires large expenditures of time and energy.

Persons using the mixed scanning approach to resolve regional environmental issues are neither as optimistic as the rationalists nor as pessimistic as the incrementalists. From the mixed scanning perspective, the long-term future is highly uncertain. Although it cannot be fully grasped, it is possible to set some general guidelines about the future. These guidelines are not as explicit as the long-term goals of the rationalist, but they do give a perspective on the future and allow the identification of critical short-term issues.

The mixed scanner shares with the rationalist the assumption about the systematic nature of the regional environmental system. One of the major foci of the guidelines developed by the mixed scanner is the interdependencies between essential subsystems. The long-term guidelines must address the critical interdependencies of these subsystems. Such questions as: "Will the transportation system be constrained by energy?" or "How should industrial growth be linked to human settlements of the region?" must be addressed by the mixed scanner in developing long-term guidelines.

The mixed scanning approach requires a great deal of technical expertise, but it is also possible for citizens of the region to participate in developing guidelines on the long-term regional environmental future. The mixed scanning approach to environmental issues also requires the political insights of timing and leverage in order to deal with and resolve the most critical environmental issues.

The mixed scanning approach to agenda-setting attempts to combine the best aspects of the rationalistic approach and the incrementalist approach. It makes a serious study of a long-term future and develops guidelines about that future. These guidelines help identify critical shorter-term projects that must be addressed by the RELS. As these short-term issues are addressed, the RELS participants develop new insights and understanding of the region's environment. This enables the long-term guidelines to be revised and updated from the perspective of practice.

Network Building and Maintenance. To carry out any aspect of the primary processes of dialogue, decision, action, or evaluation requires resources. The resources utilized by the RELS come from the RELS membership, from the variety of institutions in the public and private sector of the region, and from agencies outside the region. The resource network consists of the RELS members and any institutions or agencies that can assist the RELS in carrying out its policies and programs of action. Money needed for RELS projects could come from membership dues, contributions of local businesses, and grants from Federal agencies. Human resources can come from time donated by RELS members, from staff of local businesses and industries, from staff of agencies such as the regional EPA or Department of Transportation, from local school districts, or from institutions of higher education. One of the key secondary processes is for the RELS to gain the ability to have access to key resources. Three variables -- types of cooperative relationships, the amount of cultivation of the network, and membership development -- help us understand the network building process, and more importantly, help us understand how we can guide the network building process of the RELS.

We identify several distinctly different approaches that the RELS members can use to create cooperative relationships within their networks. All of these relationships are based on different criteria, are established in different ways, and can be used in different circumstances.

The first type of relationship is the utilitarian relationship, in which there is a discrete negotiated exchange of one resource for another. In a sense RELS members say, "I will give you something if you give me something." To carry out this type of relationship, the RELS members must first have something to exchange -- either resources, in terms of money or salary, or the prestige of participation in an important community issue. Secondly, there must be people willing to make the exchange. There must be scholars to make studies and people to participate in study committees and task forces. Thirdly, and most importantly, the RELS members must have the capability of negotiating the exchange.

The second major type of cooperative relationship is building coalitions of common cause. In this type of relationship, the RELS members build a coalition with groups that have similar goals or are concerned about the same issues as RELS members. Coalitions of common cause are built under the belief that by working together different groups can resolve an issue so that there are benefits for the common good; that is, there will be something in it for everybody. Coalitions of common cause can be built around specific issues, such as energy or solid waste, or around more general issues, such as the long-term environmental future of the region.

A third method is to recruit resource people to RELS membership. The people with key resources, such as money, time, or essential knowledge, are asked to be part of the collective inquiry of the RELS. They can be invited into full membership in the RELS or they can be asked to serve on a special RELS study committee. Enhancing cooperation through recruitment could have some disruptive effects on the RELS. Every time new people are invited into RELS, the agenda must be renegotiated. If the new members of RELS have a significantly different agenda, this could cause delay in moving to resolve an issue.

There are several ways in which RELS members can use personal relationships to build cooperative relationships with people in the networks. There is the appeal to people in the same reference group. Members of RELS who are in business can appeal to other business people, and university professors who belong to RELS can elicit support and resources from other university staff. A second type of personal relationship is that of friendship. Oftentimes, RELS members can ask their friends to contribute resources to the work of the RELS, either through volunteering time or donating money or other resources.

Finally, there is a formal or legal type of relationship that can be used to mobilize resources. When RELS members hold positions of authority in either private or public sector institutions, they may have legitimate authority to direct their staffs to cooperate with the RELS group on a particular project. Oftentimes expertise from agencies can be elicited for study groups, and for the evaluation of RELS proposals.

The amount of network shaping is the key aspect of the network building process; it is also one of the most difficult. Network shaping consists of creating, eliminating, restructuring, or reconstituting certain groups and organizations within the network. The purpose of network shaping activity is to make it easier to build cooperative relationships with given resources, or to make available to the network previously unknown resources.

For example, if the RELS is having a difficult time obtaining the cooperation of the regional transportation agency on a particular policy or program that RELS is designing, it might want to make sure that the citizens advisory council, which is mandated by law, is constituted and effectively functioning. RELS members also may wish to endorse candidates for elected office who are sympathetic to addressing regional environmental issues.

A third important aspect of network building is having an adequate staff who will support the RELS members in their resolution of environmental issues. The RELS staff must have the ability to direct the process of collective inquiry, and also to handle multiple relationships that are necessary to sustain a RELS. Hence, the major dimension of network building is the creation of a competent RELS staff. Resources -- the appropriate number and types of resources -- are vitally necessary if the RELS is to resolve environmental issues. Those RELS that can: 1) use multiple processes of building cooperative relationships, 2) work actively to build and shape the resource network, and 3) maintain a competent support staff, are most likely to build strong ties to substantial numbers and types of resources.

Organizing. The RELS members must find an effective mode of organizing so that they are able to carry out their policies and programs of action. A particular task must be broken into its subparts, specialized resources must be brought to bear on each of the subparts, and there must be coordination of the subparts with the specialized resources. There are three modes of organizing that can be used by the RELS: the bureaucratic mode, the entrepreneurial mode, and the direct mode. In the bureaucratic mode, the RELS members get things to happen through the already constituted institutions and agencies of the private and public sector. In the entrepreneurial mode, the RELS members organize a new coalition of resources to carry out the task. In the direct mode of organizing, the RELS members implement the task directly.

In the bureaucratic mode of organizing the RELS members utilize an existing agency or institution to implement particular tasks. The bureaucratic mode of organizing works best when the RELS members believe that there exists an agency or institution with the charter that could accommodate the tasks that they wish to accomplish, and that the director of the bureaucracy, usually a RELS member, is willing to undertake a project. In the bureaucratic mode of organizing, a formal or informal contract to perform a certain task is made between the RELS membership and the director of the bureaucracy. For the bureaucratic mode of organizing to be successful, RELS members must understand the task or project that is to be implemented. Collective inquiry on the particular environmental issue should give the RELS members a firm grasp of the task or project to be undertaken. They must also be able to judge when it is appropriate to use the bureaucratic mode. There are occasions when the director of any bureaucracy does not control the necessary resources for task accomplishment; in this case, the entrepreneurial mode should be utilized. There are other occasions when the most practical approach is direct action by the RELS.

Successful use of the bureaucratic mode also requires that the director or manager of the bureaucracy understand his or her organization. He or she needs to know exactly what resources and capabilities the organization commands, where these resources are located, and how they can best be mobilized. The director of the bureaucracy must also be skillful in the art of delegation. He or she must know what is to be delegated, how much is to be delegated, and to whom to delegate.

Oftentimes the RELS members do not have control over the resources they need to carry out particular tasks. In this situation, the RELS members must hustle, promote, sell, and, in a variety of other ways, enlist the aid of other people in the resource network.

To utilize the entrepreneurial mode, RELS members must first understand the task and be able to divide it into its appropriate subtasks, designating the people to carry out each of these tasks. Secondly, they must be able to convince key people to carry out the tasks. This requires a great deal of creativity and a wide range of influencing skills. The third important skill for RELS members is a real understanding of the resource network, especially an understanding of the informal arrangement of the social structure and key individuals within the network.

RELS members can accomplish a task in a third way -- by the direct approach using their own resources. There are some tasks that consume less time and less energy if they are done by RELS members. There may not be a bureaucracy to carry out the task, and the potential payoff of the task does not warrant utilizing the entrepreneurial mode.

The major disadvantage of the direct mode of organizing is that the RELS members are utilizing their time for "doing" instead for "getting things done." By directly doing a task they limit their capacity to get things done through others. This is a reduction of task accomplishment capacity within the RELS.

The organizing mode chosen by the RELS has much to do with its effectiveness. RELS that are only able to mobilize a few resources for task accomplishment try to do most things using the direct mode of organizing, and give very little emphasis to the bureaucratic and entrepreneurial modes. Those RELS that are able to mobilize many resources, and a large amount of resources, utilize all the organizing modes. There is a moderate usage of the direct mode and bureaucratic mode of organizing, with a heavy emphasis on the entrepreneurial mode.

A Model of Collective Inquiry

Just as the participants come to the RELS with a "theory of action" about environmental issues, they also come with a "theory of action" about collective inquiry. Participation in collective inquiry has a cognitive basis; how people behave during collective inquiry is influenced by their images and mental models. Contained in these images and mental models are explicit or tacit ideas about:

- desired outcomes: the desired results, which define effective collective inquiry;
- courses of action: what actions might be taken to accomplish the desired outcomes of collective inquiry;
- situational factors: factors that affect the effectiveness of collective inquiry but are not controlled by the participants; and
- assumptions: beliefs about how the outcomes of collective inquiry are influenced by the courses of action and the situational factors.

These interrelated ideas that participants bring to the work of the RELS represent their theory of action about collective inquiry. In this section, we outline a model for collective inquiry in a RELS which makes explicit statements about the desired outcomes of collective inquiry, the courses of action for collective inquiry, the situational factors, and the assumptions which relate courses of action and situational factors to effectiveness of the collective inquiry.

Outcomes of Collective Inquiry

Collective inquiry has been described in terms of four primary processes and three secondary or supporting processes. Effective collective inquiry can be described in terms of the desired outcomes from these processes. Table 3.1 lists some of the important outcomes for the primary processes, and Table 3.2 lists some of the important outcomes for the secondary processes. These desired outcomes are stated in broad general terms. In a given situation they can be made more specific.

Decision and Situational Variables

In this section we outline several variables which we believe influence the effectiveness of collective inquiry. If these variables can be controlled by the participants, then we call them decision variables. If they cannot be controlled by the participants in the RELS, then we call them situational variables.

Uncertainty in Issue Resolution. In Chapter 2, we outlined the structure of environmental issue resolution. We pointed out that environmental issues are complex, ill-structured, and value-laden, and that this combination caused a great deal of uncertainty for decision-makers. Uncertainty in the task of resolving regional environmental issues is defined as the difference between the amount of information required to design an appropriate policy or program of action and the amount of information already possessed by the group. In both a qualitative and quantitative sense, the resolution of environmental issues involves a high degree of uncertainty.

We can analyze the uncertainty involved in the resolution of environmental issues along two dimensions (Perrow, 1970); there is an uncertainty resulting from the variety of information and uncertainty resulting from the ill-structured nature of information about environmental issues. RELS must work with a large number of groups possessing a variety of value perspectives. It must collect and organize data from a wide variety of public and

TABLE 3.1: OUTCOMES FOR THE PRIMARY PROCESSES

Dialogue

- Mistaken assumptions in the "theory of action" about the environmental issue are reformulated.
- Incongruities between what people say about an environmental issue and the actual issue are reconciled.
- Vaguenesses in the expected resolution of the environmental issue are made specific.
- Ambiguities in the expected resolution of the environmental issue are made clear.
- Information "overload," or excessively rich information, is organized with a theory of the environmental issue.
- Sparse information is enriched by data collection and information search.
- Hypotheses about the environmental issue are stated so that they can be made testable.
- Scattered information is brought together so that a whole picture emerges.
- Information is not withheld or suppressed but surfaced and brought into use.

Decision

- There is a creative sharing of ideas among RELS participants.
- RELS participants can formulate a wide range of alternative resolutions of an environmental issue.
- RELS participants consider several alternatives before making a decision.
- RELS participants utilize appropriate information to assess alternatives.
- Consequences of alternatives are explored before decisions are made.

Action

- There is a commitment to put decisions into action.
- Actions are carried out in an organized and efficient manner -- there is a clear system of scheduling, coordinating, and accountability.
- Actions are modified to handle unexpected circumstances and situations.

Evaluation

- After a major action is taken, it is evaluated.
- The causes of unintended consequences from actions are always investigated.
- There is wide participation in the evaluation.

TABLE 3.2: OUTCOMES FOR THE SECONDARY PROCESSES

Agenda-Setting

- The RELS utilizes a mixed scanning approach to agenda-setting.
    - seriously studies the long-term future and develop guidelines about the future
    - identifies critical shorter-term projects for immediate action

Network Building

- RELS members use multiple processes for building cooperative relationships.
- RELS members are actively shaping the resource network.
- RELS staff members are able to carry out their tasks in a competent manner.

Organizing

- The RELS chooses the appropriate mode of organizing.
- There is a heavy emphasis on the entrepreneurial mode of organizing.

private sources, and it must address a wide range of issues, from regional air quality to the neighborhood environment. One major cause of uncertainty during collective inquiry on an environmental issue is the wide variety of information sources that the RELS must utilize.

Secondly, there is a great deal of uncertainty caused by the ill-structured nature of environmental issues. Our present knowledge of environmental systems is, at best, tentative and preliminary. Hence, there is not a well-defined body of knowledge to guide our work in the design of environmental policies and programs of action. Our knowledge of cause and effect relationships in environmental systems is usually minimal. This makes it difficult or almost impossible to design the appropriate interventions for these systems. In addition, environmental systems are dynamic in nature and constantly changing. Yet the effects of change in one part of the system often take a long time to appear in other parts of the system. All of these factors contribute to the ill-structured nature of environmental systems.

A major variable affecting the effectiveness of collective inquiry is the uncertainty of the enviromental issues or themes that are the subject of inquiry. In some cases, this uncertainty can be controlled. For example, in a classroom an environmental theme can be chosen for which there is well-known information and a clear structure for the theme. Or a complex theme, in which the issues are highly uncertain such as "U.S. energy policy in the 80's," can be chosen. Sometimes there is no control of uncertainty. For example, setting regional air pollution standards is an issue fraught with much ambiguity and uncertainty.

The Structure of the Resource Network. As we saw earlier, access to resources is critical to the functioning of RELS. If RELS does not have access to any human resources or to political, institutional, and organizational clout, then it will not be able to implement its policies or programs of action, or any of the tasks of collective inquiry.

The structure of this resource network has a strong influence on how effectively RELS can carry out the processes of collective inquiry. Two variables help us understand the structure of the resource network. The strength of relationships indicate how much influence or control the RELS has over key resources and decisions. If the RELS has strong ties to substantial resources, then there is a strong resource network. On the other hand, if RELS has only weak ties to limited resources, then the network is a weak resource network. The kind of network relationships refers to the type of positive links that the RELS has with the resource network, and whether these linkages are of the appropriate type.

Interpersonal Action Strategies. When RELS participants come together as a group to resolve an environmental issue through collective inquiry, the group usually has a pretty clear consensus about what is proper and expected behavior for its members.

Action strategies represent the participants' consensus on what is proper and expected behavior during interpersonal interaction. The action strategies utilized by the RELS participants during collective inquiry are an important set of variables in influencing the effectiveness of collective inquiry.

In discussing action strategies, we follow Argyris and Schoen (1978) and distinguish two models for interpersonal behavior, Model I and Model II. Model I makes explicit the action strategies that Argyris and Schoen believe most frequently occur in groups engaged in collective inquiry and which they believe lead to ineffective collective inquiry. Model II makes explicit the action strategies that Argyris and Schoen believe would lead to effective collective inquiry. Table 3.3 gives a brief summary of Model I and Model II interpersonal action strategies.

Methods and Tools of Collective Inquiry. A fourth major factor influencing the RELS is the methods and tools of collective inquiry utilized by the RELS membership. Each of the primary processes of collective inquiry has a particular purpose or goal. In dialogue, the purpose is to achieve of a common framework of appreciation among the RELS participants. For the decision process, it is a selection of an appropriate action, policy, or program. The purpose of the action processes is to carry out the decision, and the purpose of the evaluation process is to learn through action. Effective collective inquiry requires us to manage ideas. If they are to work effectively at dialogue, decision, action, and evaluation, and if they are to resolve environmental issues, then RELS participants must be able to carry out certain idea actions; that is, they must be able to generate, clarify, structure, elaborate, challenge, restructure, and communicate ideas. A method of collective inquiry is a normative pattern of idea management that allows RELS participants to accomplish one of the primary processes of collective inquiry. We usually think of tools as an instrument that facilitates some manual operation. Tools of collective inquiry refer to any instruments that facilitate our development of ideas.

TABLE 3.3: INTERPERSONAL ACTION STRATEGIES

Model I	Model II
1. Unilaterally design and manage the setting of collective inquiry. Participants plan actions secretly; they persuade or cajole others to agree with their definition of the environmental issue.	1. Share power with all the participants. RELS participants share power together. RELS is an opportunity for the participants to take an active part in resolving the environmental issue.
2. Own and control the task. Participants claim ownership on how the environmental issues should be resolved. They attempt to get others to see the problem their way.	2. Control the task jointly. Every RELS participant controls the work of collective inquiry. Participants work together to control the direction of collective inquiry.
3. Unilaterally protect youself. Participants keep themselves from being vulnerable by speaking in abstractions, by avoiding reference to directly observable events, and by withholding thoughts and feelings that might explain their behavior.	3. Errors are embraced. A recognition of errors is important for collective inquiry. Errors are seen as an opportunity for learning and clarifying an issue.
4. Unilaterally protect others. Participants withhold valuable and important information, suppress feelings, or tell "white lies" in order to protect others.	4. A mutually supportive environment is created. RELS participants create a supportive environment -- one that builds and maintains a sense of personal worth and importance among the participants.

A number of methods and tools of collective inquiry, and appropriate ways to use these tools, are discussed in Volume 4, *Conducting of Collective Inquiry*. The choice of appropriate methods and tools is one of the most fundamental design decisions that a RELS leadership group must make.

Idea Management Skills of RELS Members. The collection of valid and useful ideas is important in resolving environmental issues. One of the most important influences of the process of collective inquiry is how these ideas are combined or utilized for the purposes of problem solving and decision-making. The structuralist or developmental tradition of psychology maintains that the way we process or manage ideas from our environment is dependent on organizational properties of cognition.

> The structuralist tradition, . . . maintains that concepts are by no means independent or unrelated, but instead, are bound to one another by common structural features. . . . The implication of a structuralist tradition is that there are predictable regularities in a child's development of knowledge, due primarily to a human tendency to construe the world according to universal structures or patterns. With development, these patterns become more complex, differentiated, and adapted. (William Damon, 1977)

A common feature of all structural or developmental traditions is that our ideas -- our beliefs, attitudes, theories, concepts, needs, etc., affect not only what we think, but also how we think; that is, how we organize or process our ideas. Although this tradition of psychology is not universally accepted and is not without its major critics, it does offer a perspective on individual skills of managing ideas and how these skills are related to collective inquiry.

Two different persons could be presented with the same information about an environmental issue, yet each could react differently to this stimulus. In one case, the person might pick up very few ideas about the issue and combine these ideas in a simple manner. In another case, the stimuli may activate many ideas and these ideas may be combined in very complex ways. In each case, the person managed ideas differently.

Following Schroder, Driver, and Streufert (1967) we distinguish levels of idea management that describe the way ideas are received, stored, processed, and transmitted by persons. The levels range from low integrated complexity (few ideas, simple rules) to high integrated complexity (many ideas and many levels of rules connecting these ideas). Table 3.4 outlines the major characteristics for the levels developed by Schroder, Driver, and Streufert.

TABLE 3.4: LEVELS OF INTEGRATIVE COMPLEXITY

Type I: Low Integrative Complexity

A simple cognitive structure: comprises fewer ideas from stimula and mostly incomplete organization of ideas; makes evaluations in extreme or polar terms (good-bad, right-wrong, etc.); has greater intolerance of ambiguity and uncertainty, forms judgments quickly; seeks minimal information before making a judgment; demonstrates rigidity and stereotyped thinking in problem solving.

Type II: Moderately Low Integrative Complexity

Similar to Type 1: cognitive structure allows more complexity; allows alternative interpretations of situations but no means of resolving these interpretations; categories of judgment not as extreme but still restricted; tends to reject information which does fit into interpretive schemes; has a tendency to vacillate in thinking.

Type III: Moderately High Integrative Complexity

Richer cognitive structure: allows multiple interpretations and means to choose between these interpretations, evaluation begins to show a richness in interpretations; able to tolerate more situations of ambiguity and uncertainty; begins to seek more information before making judgments; problem-solving behavior manifests creativity and alternative points of view.

Type IV: High Integrative Complexity

Similar to Type III: but capable of thinking more abstractly with ideas; high degree of diversity in approach to problems; seeks multiple sources of information; can accept absence of closure on an issue; demonstrates high degree of complexity; utilizes multiple criteria in making judgments; can see second and third order effects when making a decision; able to organize large amounts of information.

Some Important Mediating Relationships

In the previous sections, the desired outcomes of collective inquiry and the decision and situational variables have been outlined. Decision and situational variables are related to outcomes through assumptions about mediating relationships. The major mediating relationships of the "still picture" model are given in the following hypothesis:

> When collective inquiry involves highly uncertain environmental issues, then a RELS is more likely to be effective if:

1. a critical number of participants have high integrative complexity;
2. Model II interpersonal action strategies are utilized in the collective inquiry;
3. the methods and tools of collective inquiry can structure information from a wide variety of sources and on complex environmental issues;
4. the RELS participants are able to consistently mobilize the right kind and number of resources necessary to carry out the policies and programs of action which they design;
5. the RELS participants are able to appropriately organize the human resources needed to implement the policies and programs of action; and
6. the RELS leadership must be able to speak in some minimal way all the "languages" that are spoken in the network and must be highly competent in the language of the most powerful network members.

The role of integrative complexity in collective inquiry has been studied by Schroder, Driver, and Streufert (1967). The impact of Model II behavior on collective inquiry has been studied by Argyris and Schoen (1978). The way in which methods and tools have facilitated the studying of complex ideas has been summarized by Warfield (1978). The last three statements of the hypothesis are developed by Kotter and Lawrence (1974). This hypothesis was utilized in developing the guidelines of the succeeding chapters.

A "Moving Picture" Model of RELS

In Chapter 2, we pointed out that one of the major characteristics of RELS-like entities is that they grow in an organic and evolutionary manner. As we indicated in Chapter 1, the most important lesson to be learned in organizing a RELS is that a successful RELS must be grown, not installed. Too often people, agencies, and institutions within a region have attempted to plug the RELS idea into conventional regional structure like an electric appliance, and they have blown some fuses in the process. The "moving picture" model is intended to help us understand this growth process. It will be utilized in succeeding chapters to provide guidelines for this organic and evolutionary growth.

The path of RELS evolution depends on its own history and starting point. There is no one path in itself that is superior for RELS evolution, although in a given specific context of a region one of these paths may be more appropriate than others. Some RELS may evolve in a very fast manner and skip some of the steps in the evolution. Others may move to a certain point and remain there for awhile. It is important to realize that the paths that a RELS should take, and how fast it should evolve, are related to conditions that are specific and appropriate to the region. These conditions are determined by the situation and history of the region.

A common mistake in attempting to organize collective inquiry in a particular region is for that region to look admiringly at how some other region worked to resolve a major environmental issue, and to see that approach to organizing collective inquiry as the solution for its own dilemmas, then try to imitate or transplant that solution as best it can. If the imitation or transplanting approach to the design of RELS is taken, we can almost guarantee that the attempts to organize collective inquiry will fail. A RELS must be a self-designing system. The participants in RELS must have a clear idea of the underlying processes of collective inquiry, and the context in which these processes are to be carried out. At each point of the evolution, the RELS participants must ask "What do we know now that we did not know before?" and "Knowing what we know now, what would we do differently?" The "moving picture" model will provide some guidelines for the self-design and self-evaluation of RELS.

The Phases of RELS Development

In the "moving picture" model of RELS we view the evolution of RELS in terms of three major phases:

Phase 1: Mobilizing Interest in the RELS
Phase 2: Creating the Initial RELS Experiment
Phase 3: Institutionalizing the RELS

As with any model, the "moving picture" model does not describe the evolutionary process of RELS growth in all of its complexity. The utility of the "moving picture" model, we believe, is that it is an appropriate simplification of RELS evolution; it identifies key decisions and outcomes for each phase of RELS evolution.

Phase 1: Mobilizing Interest in the RELS

If we can compare the evolution of the RELS to the life cycle of a human being, then this first phase represents the gestation and birth of the RELS. During this initial phase, a core group of people begin to meet and discuss ways of resolving regional environmental issues. These people become aware of the failures of the traditional processes of governance and education to resolve these issues, and they initiate a search for new approaches to resolving environmental issues. These early meetings are informal. There are a minimal number of roles and little structure to the meetings. Once a core group of people has mobilized interest, it is then ready to actually engage in the resolution of a particular environmental issue.

The first phase of RELS evolution will take anywhere from six to eighteen months, depending on the size of the region and the amount of interest that must be mobilized. If the core group does not take enough time to mobilize interest then its proposal will be ill-conceived and most likely a poor imitation of another region. If the core group takes too long, then the proposal for RELS will die for lack of interest.

Phase 2: Creating the Initial RELS Experiment

The second phase represents the childhood and adolescence of the RELS. The core group is able to initiate an initial experiment in issue resolution involving a wider group of people within the region. In this initial experiment, an environmental issue is chosen -- an experiment in agenda-setting. The issue resolution processes of dialogue, decision, action, and evaluation are utilized. Resources are mobilized -- an initial experiment in network building. Action is taken to resolve the environmental issue -- an initial experiment in organizing. Assuming that sufficient interest has been mobilized during

Phase 1, the initiation of a well-conceptualized RELS will take from one to three years to complete.

Phase 3: Institutionalizing the RELS

In our metaphor of comparing RELS evolution to the human life cycle, the third phase represents adulthood, when the gains of adolescence are consolidated and solidified. In the third phase, the RELS is institutionalized within a region; that is, it is made a permanent and complementary part of the institutional processes within the region. Following the initial success in dealing with one or more environmental issues that affect the region, the leadership group of the RELS must now develop a more permanent structure for the RELS. There must be leadership committees, study committees, staff for research, and an ongoing process of funding for the RELS activity. During the institutionalization phase the RELS becomes legitimate within the region. The RELS is no longer thought of as the brainchild of certain leaders within the region. Instead, it is considered a necessary part of regional governance and education.

Structural Characteristics of RELS

The phases of the "moving picture" model are illustrated in Figure 3.1, along with certain organizational characteristics that change during the phases of evolution. These characteristics are uncertainty about the RELS concept, the formality of the RELS structure, and the integration of the RELS.

The Uncertainty of the RELS Concept

In the mobilization phase there is high uncertainty about the RELS concept. In the initiating phase there is moderate uncertainty, and in the institutionalizing phase there is low uncertainty about the RELS concept. At the beginning of RELS evolution there is a great deal of uncertainty with respect to the concept of RELS. The concept of RELS is ill-formed; there is much conflict and difference of opinion over the reasons that the region has failed to resolve important environmental issues; there is a wide variety of

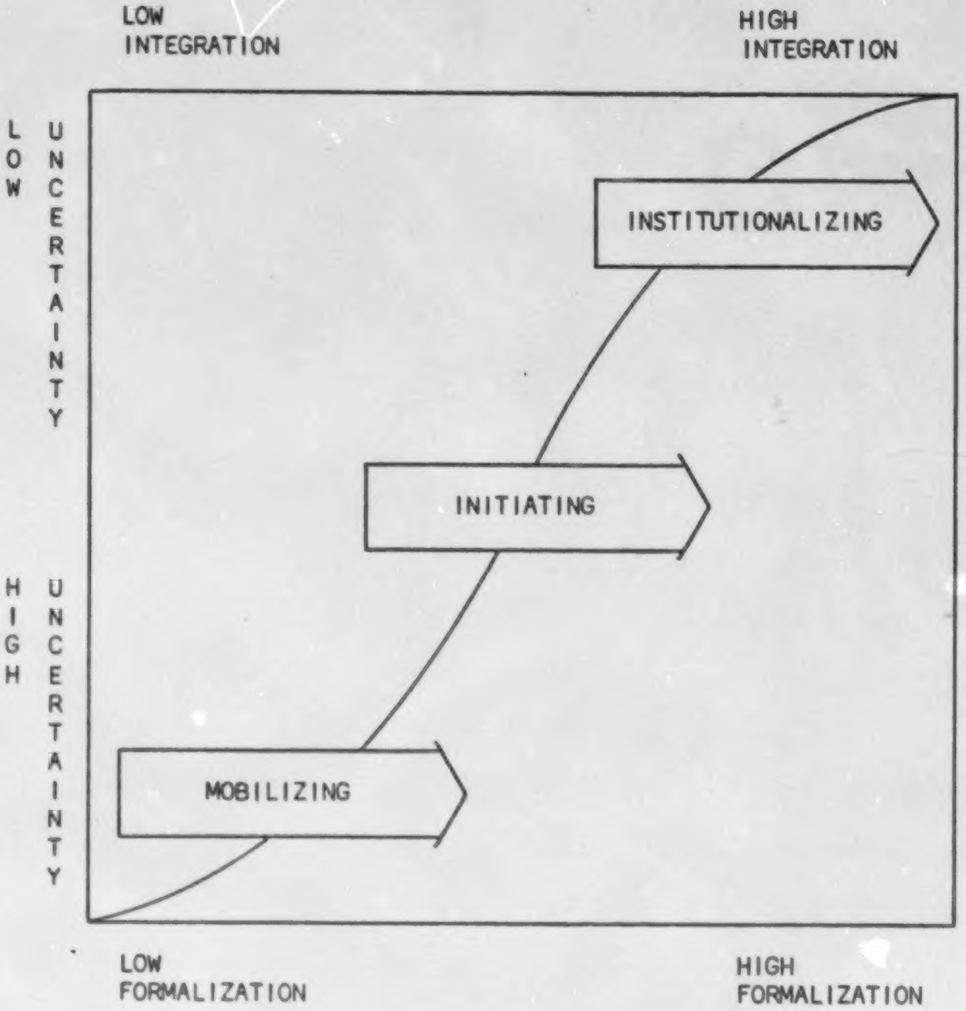


Figure 3.1: "Moving Picture" Model of RELS

opinion about the best way to approach these problems. These aspects of the mobilizing phase create a situation of great uncertainty.

Over time a consensus on the concept of RELS begins to emerge within the region. The concept emerges slowly at first, but then there is great clarity. Through trial and error, experimentation, and through continued critiquing of past accomplishments, there is a refinement of the RELS concept, and much clarity develops. Success in settling key organizational dilemmas brings with it a confidence that RELS participants are moving in the right direction. As the RELS begins the institutionalization phase, the situation is one of much more clarity and certainty about the nature of RELS.

The Formalization of the RELS Structure

Formalization of structure within a social entity has to do with emphasis on rules, procedures, appropriate channels of communication, definition of roles, etc. Formalization of structure is a mixed blessing within a social entity open to many sources of information. Since communication and decision channels are not well specified, more formalization promotes creativity, divergent thinking, and development of innovative ideas. Yet, it is often difficult to get something done since it is not clear who can authorize action and mobilize resources. Once a specific task with clear objectives is undertaken, then a degree of formalization, with the procedures, rules, and role definitions greatly facilitates task accomplishment.

During the mobilization phase of RELS evolution, the structure of the leadership group has low formalization. Initially, there is no definition of roles, rules, or procedures. Meetings of a leadership group range from episodes of high frustration with little clarity emerging to very intense and exciting episodes, where creative thoughts and new ideas emerge. As the RELS moves through the initiating phase to the institutionalizing phase, there is an appropriate formalization for a great many of the RELS structures. Leadership roles are defined, mandates for research projects are defined, financial records and reporting procedures are set up, and regularly scheduled meetings with set agendas are held. It is through the appropriate formalization of structure that the RELS is able to organize and have an impact on regional environmental issues. A major concern during the evolution of RELS is choosing the appropriate degree of formalization for the RELS at any particular point in its development. Choosing to formalize RELS too quickly could cut off important information and ideas for developing the RELS concept. Not formalizing RELS at the appropriate time may lead to endless, frustrating discussion, and no action.

It would be a mistake to think that in the institutionalized RELS there is a complete formalization of structure. The term "appropriate formalization" better describes the RELS at this latter phase of its development. Appropriate formalization means that there are highly formalized structures for tasks that are clearly defined and involve little uncertainty, and structures with lower formality for the tasks that are ambiguous and uncertain.

The Degree of Integration

Integration is the degree to which RELS members are appropriately coordinated to accomplish the goals of common interest. Participants in the RELS network are from a wide variety of interrelated but autonomous centers of action and decision-making. At the beginning of the mobilization phase, these centers of action and decision-making are coordinated toward a common task, and perhaps are not even aware of each other or their common interests. As the RELS moves through its early experimentation to the institutionalization phase, there gradually emerges a coordinating role or roles within the RELS. This coordinating role may be played by the RELS leadership, or there may be an ombudsperson who focuses coordination among the RELS participants. During the movement through the phases of RELS evolution there is a movement from a low degree of integration to a high degree of integration.

Summary

In this chapter, we have outlined two models that will help in the creation of a RELS -- the "still picture" model and the "moving picture" model. The "still picture" model identified the essential processes of collective inquiry and an approach to designing these processes in an effective manner. The "moving picture" model outlined the major phases in RELS evolution and the structural characteristics of this evolution.

Chapter 4

A ROAD MAP FOR RESOLVING ENVIRONMENTAL ISSUES

Introduction

In the preceding chapters we developed the concept of the RELS and presented models for RELS based on collective inquiry and action. Now we will offer some step-by-step guidelines for actually carrying out the primary processes of collective inquiry. We call these steps the issue resolution cycle because their purpose is to resolve an environmental issue; hence, "issue resolution." "Cycle" indicates the recurring nature of the steps; as the RELS develops through the three phases (see Chapter 3), this cycle occurs repeatedly. More will also be said about this in subsequent chapters. What is important to understand at this point is that, although the issue resolution cycle occurs many times during the existence of the RELS, the sequence of steps remains the same whether this is the first or fiftieth time the RELS has undertaken an issue resolution cycle.

We hope that by now you have started thinking about RELS as a new way to work at resolving environmental issues in your region, and that you are interested in more detailed information about what to do. That is, you are asking: How do participants in RELS carry out the primary collective inquiry processes -- dialogue, decision, action, and evaluation? What steps do we undertake to resolve an environmental issue?

This chapter offers a "road map" for resolving environmental issues. These guidelines -- the "road map" -- consist of a number of maps, or charts, showing specific steps in the issue resolution cycle. Also included is a "legend" -- an explanation of how to read the maps -- and a fairly lengthy and detailed prose description, step-by-step, for doing collective inquiry and action. Carrying out the "road map" metaphor, this is your "travel guide." It is keyed to the maps, so it should be useful as you actually begin working in your region.

Maps for the Issue Resolution Cycle

As we thought about the issue resolution cycle we wondered how best to convey our thoughts to others. We decided that a combination of "road maps" depicting the sequence of steps and prose describing the flow of activities would best accomplish our aim. Therefore, we have prepared a large composite map, "Steps in the Issue Resolution Cycle," (Figure 4.1) that is folded in the pocket on the back cover of this manual. This large map shows all of the steps in the issue resolution cycle. Since it attempts to convey a rather large amount of information, it could be rather confusing. Therefore, we have also prepared Figure 4.2, an "Overview of the Issue Resolution Cycle." We suggest looking at the overview first, before attempting to use the composite map.

The overview shows the four primary processes of collective inquiry in the issue resolution cycle -- dialogue, decision, action, and evaluation. Within each process there are two to four categories; the headings for these categories match the headings of the prose descriptions found in the latter part of this chapter. In addition, a separate smaller map for each collective inquiry process accompanies the appropriate prose description. These smaller maps show every step in the issue resolution cycle, and are identical in content to the large, composite map folded in the pocket on the back cover of this manual. Figure 4.3 shows the first twelve steps of the issue resolution cycle, "Dialogue About an Environmental Issue." "Decisions for Resolving an Environmental Issue" (Figure 4.4) includes steps 13 through 27. Steps 28 through 39 comprise the "Actions to Resolve an Environmental Issue" (Figure 4.6), and Figure 4.7 consists of steps 40 through 46, "Evaluating the Issue Resolution Cycle and the RELS."

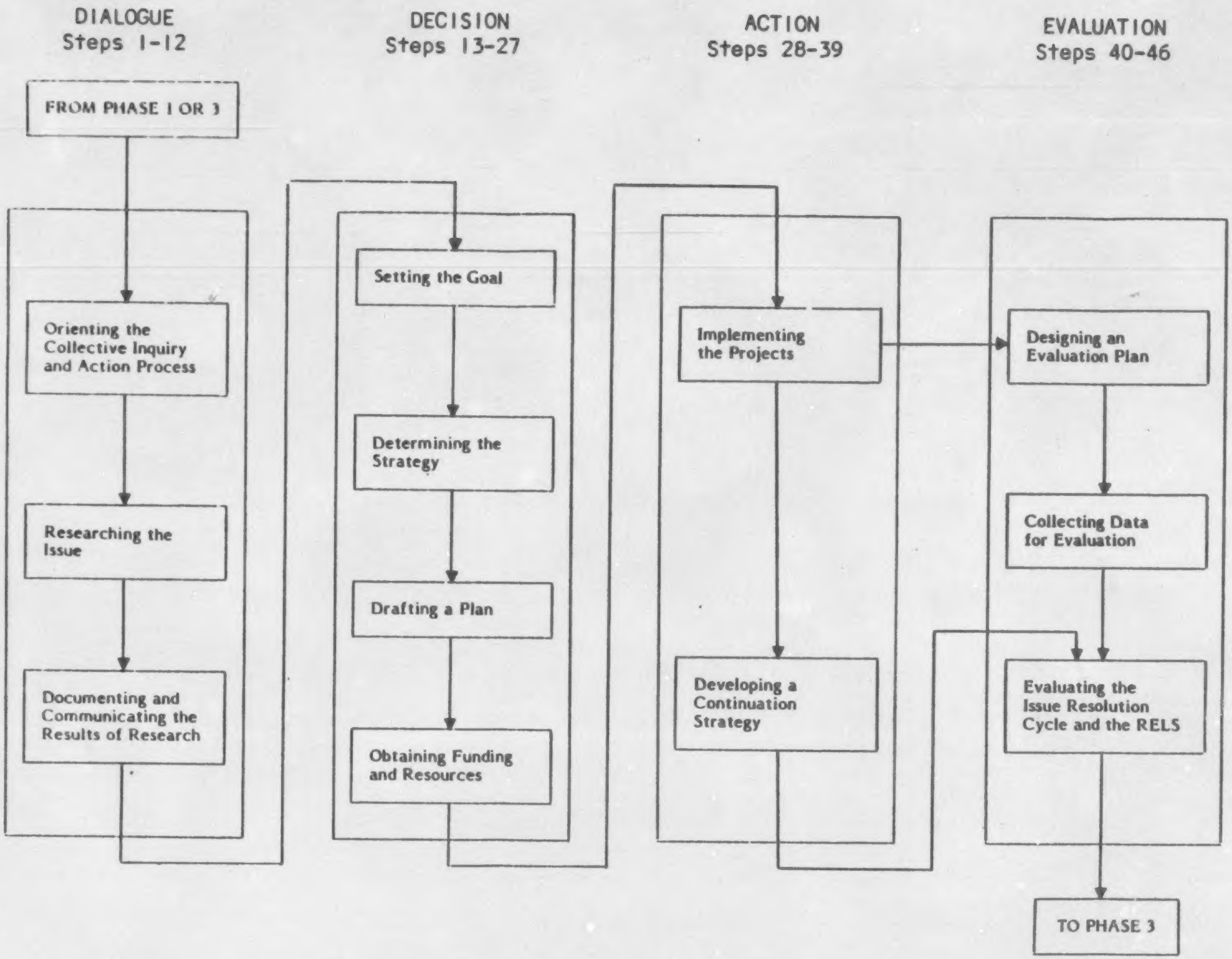
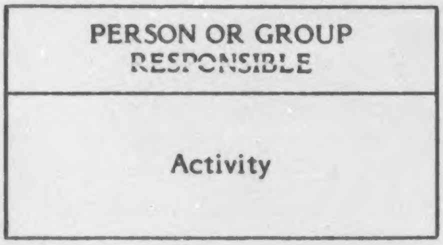

DIALOGUE
Steps 1-12
DECISION
Steps 13-27
ACTION
Steps 28-39
EVALUATION
Steps 40-46
FROM PHASE I OR 3
Orienting the Collective Inquiry and Action Process
Researching the Issue
Documenting and Communicating the Results of Research
Setting the Goal
Determining the Strategy
Drafting a Plan
Obtaining Funding and Resources
Implementing the Projects
Developing a Continuation Strategy
Designing an Evaluation Plan
Collecting Data for Evaluation
Evaluating the Issue Resolution Cycle and the RELS
TO PHASE 3

Figure 4.2: Overview of the Issue Resolution Cycle

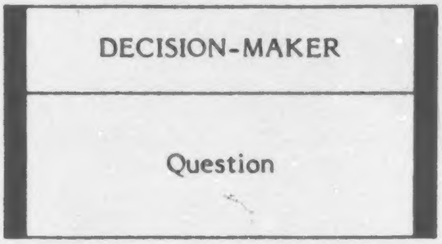
How to Read the Maps

The maps depict the flow of activities in the issue resolution cycle. They convey a great deal of information in a highly structured format and a relatively small amount of space. This information includes activities, decisions, time flow, logic connections, and who is responsible for each activity or decision.

Several symbols appear on the maps; these are explained and illustrated in the next few paragraphs.* Activity boxes are the most common symbol used on the maps. An activity box is divided into two parts; the lower part shows an activity and the top part shows who is responsible for carrying out the activity.



A decision box is similar to an activity box. The top part shows who is responsible for making the decision; that is, who answers the question shown in the lower part of the box. The right and left sides of the box are thicker, to call attention to the decision. By answering the question, the decision-maker chooses one of several alternative paths leading from the decision box to subsequent boxes.



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*This material is adapted from Warfield, 1976, pp. 421-425.

Table 4.1, "Roles in a Regional Environmental Learning System," lists and defines the responsibilities of people or groups shown in the top part of the activity and decision boxes.

The AND box may appear either before or after an activity or a decision box. Simply stated, all activities or decisions feeding into or out of an AND box must occur. The OR box is interpreted as an "exclusive OR." One and only one of the preceding activities or decision can occur *at a given time*.

AND

OR

The lines that join the various boxes represent only the flow of time, except at the output of a decision box where lines also represent the various decisions that could be made. In that case, the lines are labeled; usually with either YES or NO. The lines convey the notion of activities carried out over a period of time.

→

To use the large map, begin at the upper left hand corner. As explained elsewhere in this manual (see Chapter 7), it is assumed at the beginning of the issue resolution cycle that the environmental issue or theme to be addressed has already been selected. Proceed, one step at a time, as indicated by the lines on the map. When you reach the fifth box, which is a decision box, you will answer the question either YES or NO. If YES, proceed to box number eight; if NO, to box number six. Notice that the fifth box is preceded by an OR box. That means you enter the fifth box from either box four *or* box seven, but not both at any given time. Continuing through the activities, when you complete the activity described in box ten, you then begin to do the activities in both boxes eleven and twelve, as indicated by the AND box following box ten. After completing the entire sequence of steps in the issue resolution cycle, and answering the question in box forty-six, you proceed to Phase 3.

TABLE 4.1: ROLES IN A REGIONAL ENVIRONMENTAL LEARNING SYSTEM

Organizer	*The individual or small group of people with the initial interest in trying a new approach to addressing regional environmental concerns.* The organizer has the major role during the mobilization phase of the RELS. He or she is a neutral facilitator, someone who attempts to link people and organizations in a network that will improve environmental education. Sarason believes a RELS-like network requires a person who is perceived as important in some way, is known to many, and has persistence. The organizer's ideas should catch people's interest and bring them together voluntarily. He goes on to say that an organizer often takes no authority in implementation. He or she is available to anybody in the network, but the primary role involves keeping actions consistent with rationale. The organizer represents a set of values and beliefs. (1977)
RELS Members *(Individuals)*	*People who share an interest in addressing their region and who actively support the RELS' approach* -- through their participation, contributions, etc. Networks like RELS are not groups of people with identical interests. Instead, they have a variety of backgrounds, jobs, and perspectives. They are attracted to the RELS approach because it offers an opportunity: • to tackle a common problem from different vantage points, • to exchange different points of view, and • to find strength in a certain amount of challenge and opposition. While the leadership group is more oriented to the RELS in general, it is very possible that individual members will be more issue-oriented.
RELS Members *(Representatives of Organizations and Agencies)*	*Individuals who participate in and support the RELS primarily as representatives of organizations.* This requires both the motivation and the authority to commit their organizations to do more than they, as individuals, can do. "Part of the strength of network members lies in the organizational base with which they are connected. Often individuals are invited to join the network because of their roles within agencies, institutions, committees, and clubs. It is important that the connection between the individual and his/her organizational base be clearly and openly expressed so that the resource exchange can be broadened through contact with the organizations." (Cohen and Lorentz, 1977)
Potential RELS Members	*The group of people who have not yet joined the RELS, but represent possible additional support.* Either they have not yet been identified or they have not yet made a commitment to the RELS. In one sense, everyone is a potential RELS member, but that is not the meaning. Potential RELS members are likely to be already interested in the quality of the environment and believe that learning and action are needed. They do not have identical interests, but may be able to tackle a common problem from different vantage points. Most likely, potential members would be among the following: • employed by an agency or organization with a potential connection with the RELS; • a member of a profession related to environmental education; or • an active proponent in the environmental arena.

TABLE 4.1 (continued): ROLES IN A REGIONAL ENVIRONMENTAL LEARNING SYSTEM

Leadership Group	*Those people who manage the three basic processes of agenda-setting, network building, and organizing for the RELS.* The leadership group buys into the concept of the RELS, and thus its motive is more RELS-oriented, rather than tied to any one issue or theme RELS addresses. The leaders are the people who assume the initiative for making RELS work following mobilization. Exact titles and division of labor among committees (e.g., membership, publicity, communications, and coordinating committees, etc.) will depend on the situation. An important member of the leadership group is the "coordinator."
Coordinator	*The individual or small group of people who succeed the original organizer.* The role of the coordinator is to maintain and strengthen the linkages in the network. This requires an ability to remain neutral, to assess needs and talents accurately, to locate new resources, and to match members' needs to available resources. The coordinator is a neutral monitor of the decisions that are made during issue resolution. Cohen and Lorentz (1977) describe network coordinators as group leaders, trainers, bridge-builders, and managers. "Basically the role of the coordinator is: • to bring and keep people of different talents together, • to help them grow and develop, • to be sensitive to new problem areas that need to be addressed by the network, • to be the scorekeeper."
Study Committee	*An ad hoc committee formed to carry out collective inquiry on a particular environmental issue or theme.* The committee should be led by someone with a thorough understanding of the RELS concept. This will provide the committee with some sense of "continuity of the RELS," since the committee has a single purpose and exists for only a limited time. The members of the committee are RELS members with a specific interest in the chosen issue or theme.
Membership Committee	*A permanent committee organized to promote membership in the RELS, both on an overall basis and for specific issues.* In a larger sense, however, new members and contacts for the network are constantly being brought into the RELS through all its present members.
Project Team	*An ad hoc working group formed to conduct a specific project to resolve an environmental issue.*
Resource Network	*The individuals and organizations that represent RELS access to critical resources* including skills,, authority, money, facilities, policies, votes, etc. The network provides the RELS with: • access to financial resources, • access to and control over an implementation capacity that could handle the projects, • support for the continuance of the RELS, • access to the important decision-makers, • advice on what environmental issues are most important to the region.

Dialogue About an Environmental Issue

Overview of Dialogue

During dialogue the leadership group organizes a study committee for the selected issue. The study committee begins its work; its task at this point is:

- to clarify the purpose of collective inquiry and action during the issue resolution cycle;
- to gather and organize factual information about the issue;
- to reach a common appreciation of the issue; and
- to identify the problem areas it must address.

Of primary importance during dialogue is that the study committee develop a common way of understanding and valuing the facts about the issue or theme under study. In other words, the study committee works together to clearly define and agree upon how it views the issue. The result should be a better appreciation of the issue, based on the best information available to the study committee.

How an individual or group "appreciates" an environmental issue includes:

- the underlying system of values which shape attitudes or ideas about issues;
- beliefs about the context or situation in which the issue is addressed and resolved;
- beliefs about the range of strategies and actions for resolving the environmental issue; and
- beliefs about the outcomes of the actions that could be taken.

When research on the issue is complete, RELS can publicize its accomplishments to date; periodic publicity is one way to help establish RELS as an accepted organization in the region.

In summary, there are twelve steps in the dialogue process (Figure 4.3). These steps fall into three categories, as follows:

Orienting the Collective Inquiry and Action Process	Steps 1-3
Researching the Issue	Steps 4-8
Documenting and Communicating the Results of Research	Steps 9-12

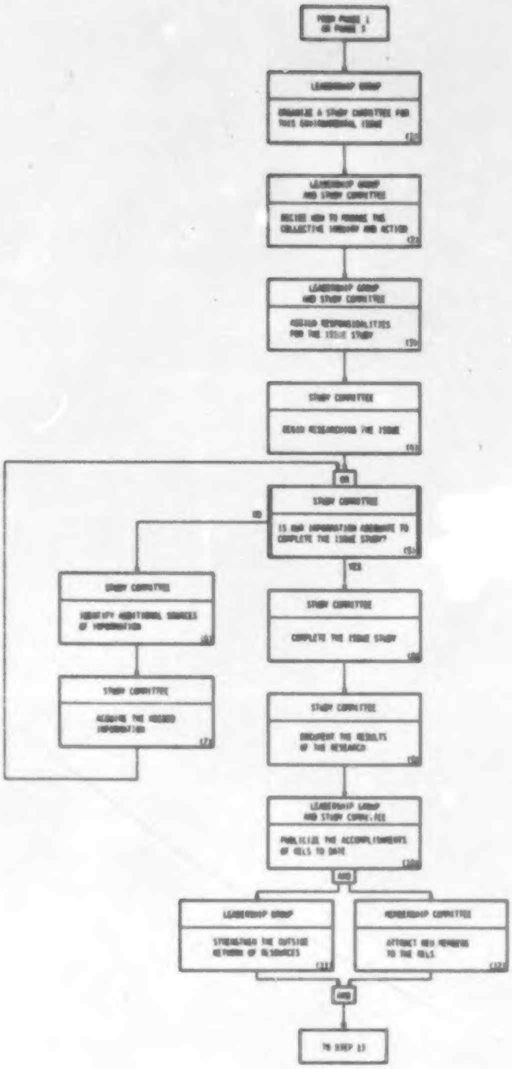
FROM PHASE 1
OR PHASE 3
LEADERSHIP GROUP
ORGANIZE A STUDY COMMITTEE FOR THIS ENVIRONMENTAL ISSUE
(1)
LEADERSHIP GROUP
AND STUDY COMMITTEE
DECIDE HOW TO PROMOTE THE COLLECTIVE INQUIRY AND ACTION
(2)
LEADERSHIP GROUP
AND STUDY COMMITTEE
ASSIGN RESPONSIBILITIES FOR THE ISSUE STUDY
(3)
STUDY COMMITTEE
BEGIN RESEARCHING THE ISSUE
(4)
OR
STUDY COMMITTEE
IS OUR INFORMATION ADEQUATE TO COMPLETE THE ISSUE STUDY?
(5)
NO
YES
STUDY COMMITTEE
IDENTIFY ADDITIONAL SOURCES OF INFORMATION
(6)
STUDY COMMITTEE
ACQUIRE THE NEEDED INFORMATION
(7)
STUDY COMMITTEE
COMPLETE THE ISSUE STUDY
(8)
STUDY COMMITTEE
DOCUMENT THE RESULTS OF THE RESEARCH
(9)
LEADERSHIP GROUP
AND STUDY COMMITTEE
PUBLICIZE THE ACCOMPLISHMENTS OF ECLS TO DATE
(10)
AND
LEADERSHIP GROUP
STRENGTHEN THE OUTSIDE NETWORK OF RESOURCES
(11)
MEMBERSHIP COMMITTEE
ATTRACT NEW MEMBERS TO THE ECLS
(12)
AND
TO STEP 13

Figure 4.3: Dialogue About an Environmental Issue

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Orienting the Collective Inquiry and Action Process

The task of orienting the collective inquiry and action process consists of organizing a study committee and developing clear expectations on:

- the issue to be addressed,
- how the collective inquiry will be conducted,
- what roles and responsibilities will be utilized, and
- how much effort will be put into the inquiry.

The formation of a study committee is very important. The leadership group takes responsibility for notifying RELS members of the opportunity to join a committee to study the selected issue. Members should be encouraged to participate even if they have little knowledge about the issue. The leadership group should ensure balanced representation from all segments of the region's population. It may also want to make sure that committee members are not so intimately involved in the issue that they cannot understand others' opinions and viewpoints.

Next the leadership group appoints a committee chairperson. The chairperson need not have expert knowledge about the issue; indeed, the chairperson is likely to be more effective at guiding the group if he or she does not have a personal stake in the issue content. The person to select as chairperson is someone who has the ability to facilitate interaction among committee members and guide the group toward achievement.

The leadership group and the study committee should choose an approach for managing the collective inquiry and action process. Suggested as possible approaches are the Charette process, the Washington State approach, and the Battelle school study method. Detailed descriptions of these approaches appear in Volume 4, Conducting Collective Inquiry. We describe them briefly here, since some readers may not have access to Volume 4.

The Charette process is a short, intensive study of a particular topic. Participants might come together for a day or a weekend. Prior to the Charette, the participants receive written study materials on the topic, prepared by staff and resource leaders. At the meeting the participants work in small groups to generate a large number of ideas about the topic. Each group prepares a report on its work; a final report is then prepared and distributed to the appropriate decision-makers. The Charette allows a lot of input on a topic in a short amount of time. Similarly, the management approach used by the State of Washington included short, intensive workshops to get citizens' input on the issues and to produce a list of goals for the state. Then a task force was appointed to work in each issue area identified by the workshop groups. These task forces prepared detailed recommendations for achieving the goals, including resource needs.

A third management approach was first used by Battelle in a study of the Columbus, Ohio, school curriculum. The Battelle staff trained eight university graduate students, who in turn worked with about 300 group leaders from all segments of the city's population. Each group leader recruited community participants, arranged for a meeting location, and held meetings to get citizens' opinions on the school curriculum. Using this approach, near 2000 participants and group leaders were involved in the collective inquiry process.

Operational aspects of committee meetings are very important. Someone should be assigned the responsibility for:

- scheduling and convening the meetings;
- arranging the locations for the meetings, including chairs, tables, audio-visual equipment, and refreshments;
- publicizing the date, time, and place of the meetings; and
- recording and distributing the minutes of the meetings.

Consideration should also be given to the amount of time to be spent on the collective inquiry process. For example, a typical study committee of the Citizens League in Minneapolis, Minnesota, meets weekly over a period of six to nine months. Each meeting lasts two to three hours. In another city, a task force was organized to analyze the problem of citizens' insecurity in their neighborhood and to recommend a program of action. The task force met six times -- once every other week for over two months. Each meeting was approximately three hours long. A school district environmental education committee might meet weekly during the summer to develop a district-wide environmental education program based on a selected environmental theme. Or the committee might meet monthly during the school year.

Answering the following questions should help the leadership group and the study committee clarify their expectations for the collective inquiry on the selected issue.

Issue or Theme

- What is the environmental issue or theme to be addressed by the study committee?
- Do the members of the study committee agree it is important?
- Are the study committee members committed to doing something about the issue?

Time Horizon

- How much time do we have to work?
- When is the collective inquiry process to be completed?
- When do we want the actions that we will finally propose to have an impact?
- Is this time horizon realistic?

Role Clarification

- Leadership -- Who will provide leadership for the study committee?
- Decisions -- Who is responsible for making or approving the decisions during the collective inquiry and action process?
- Consultation -- What persons or groups should be consulted in carrying out the issue study? Who should we consult as we do our work?
- Implementation -- Who receives the recommendations of the study committee? Who is responsible for implementing the plan?

EXAMPLE: ORIENTING THE COLLECTIVE INQUIRY

Issue

Developing a school district-wide environmental education program for grades K-6.

Time Horizon

The committee will work from June-August 1980.

The environmental education program is to be implemented during the 1980-81 school year.

Role Clarification

A committee comprised of two teachers from each elementary building is responsible for developing the plan. Staff from a local nature center will serve as consultants. The plan must be approved by the school district's Curriculum Committee at its August meeting.

Groups who should be considered:

students
parents
teachers
principals
nature center staff

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*EXAMPLE: ORIENTING THE COLLECTIVE INQUIRY**

Issue

Developing a plan to preserve and enhance the Great Miami River Corridor.

Time Horizon

This committee will work from April-December 1976.

The recommendations of the committee will be presented in a sequence based on priority for implementation and probability of funding. Some projects could be implemented immediately; others, several years in the future.

Role Clarification

The River Corridor Committee is responsible for developing the plan.

Project teams (government agencies, architects, engineers, community groups, private developers, and so on) will carry out the recommendations of the River Corridor Committee. Groups to be consulted include:

- *residents adjacent to the river*
- *businesses adjacent to the river*
- *other community residents and businesses*
- *government agencies such as Department of Natural Resources, Environmental Protection Agency, Fish and Wildlife Service, Forest Service, Chamber of Commerce, Miami Valley Regional Planning Commission, and Dayton-Montgomery County Park District*

Project's Goal

To realize the river's potential as a community resource by physically relating it to adjacent neighborhoods and to the Central Business District.

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*This example is based on the RIVERDESIGN DAYTON project (River Corridor Committee, 1977).

Researching the Issue

When the study committee first meets, it is likely that some or all of the members will have some information to share about the issue. This information might include:

- data and facts needed to understand the issue;
- constraints or factors which are potential limitations to resolving the issue; and
- hopes, dreams, or ideals about future actions of the study committee and the RELS.

The committee members may want to spend some time sharing their information and ideas. This early sharing of information is helpful for identifying aspects of the issue needing further exploration and input, as well as potential resource persons to provide that input. The study committee might also consult with the leadership group about appropriate resource people. Efforts should be made to hear from resource people representing a wide range of perspectives on the issue. Through written material, oral presentations, and discussions, the resource speakers can provide background information and insights on the issue. As an example, a Citizens League committee may hear from as many as fifty resource speakers. Over the course of many meetings the study committee will acquire a great deal of understanding about the issue and its implications.

Before moving on, it is important to devote effort to developing a common agreement among committee members on just what the various aspects of the issue are; that is, the central questions needing answers or the clearly stated problem areas. A useful technique for reaching agreement among committee members is the writing of need statements. Need statements help clarify the important problem areas that require further attention. To write need statements:

- begin each need statement with "There is a need to. . ."; then,
- follow with a phrase describing a problem, goal, or objective that the study committee has identified as important for resolving the issue.

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*EXAMPLE: NEED STATEMENTS**

In a large metropolitan area a study committee was formed to explore the problems of solid waste management in the region. Following extensive research of the issue, the committee prepared the following need statements:

1. *There is a need to encourage an orderly, cost-effective recovery of energy and marketable materials from refuse, and reduce the area's reliance on sanitary landfills.*
2. *There is a need to encourage the efficient, responsive collection of refuse in the metropolitan area.*
3. *There is a need to encourage the efficient regulation and disposal of hazardous wastes.*
4. *There is a need to promote the salvage and reuse of scrap materials at their highest levels.*
5. *There is a need to reduce waste and encourage the judicious use of natural resources.*

Documenting and Communicating the Results of Research

During the research effort the study committee will accumulate a substantial amount of written information (meeting agendas and minutes, reports from resource speakers, articles and clippings on the issue, and so on). The results of the research can be documented in several ways:

- a summary of the minutes,
- a summary of each speaker's input,
- a written report covering all of the research, or
- a summary of what has been learned so far.

The process of drafting, and probably redrafting (after more deliberations by the study committee), the documentation will further enhance the members' understanding of the issue.

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*This example is based on the Citizens League Report, "Taking the Waste Out of Minnesota's Refuse."

At this time, the leadership group will probably want to be brought up-to-date on the results of the committee's research -- the facts about the issue -- as well as the committee's conclusion about problem areas. This written documentation will serve as a starting point for the next steps in the committee's activities.

Publicity about the committee's work thus far is again appropriate. This publicity informs others in the region about the issue, as well as recruits members and identifies additional resources for this issue or future issues.

Decisions for Resolving an Environmental Issue

Overview of Decision

By this time the study committee has developed a common appreciation for the issue -- it has an understanding of the problems and opportunities that it must address in its plan. Now the study committee looks to the future and makes choices on how to create the desired future and resolve the environmental issue. That is, during these steps the study committee will set a target of the goals it wants to accomplish and determine a strategy for accomplishing the goals. Then the study committee will draft a plan for implementing the selected strategy. At this time the planning would only be detailed enough to let the study committee prepare proposals for funding. Each problem area calls for a project or a set of activities. The study committee decides what the projects will be and when they will occur. The plan might simply be a DELTA chart, a Gantt chart, or a similar chart of the projects and sequence of activities. Although the study committee prepares the plan, the leadership group is given the opportunity to make suggestions about the plan. Then both the study committee and the leadership group work together to obtain funding for the projects and to publicize the accomplishments of the RELS up to this time.

In summary, decision includes steps 13-27 (Figure 4.4). These steps fall into four categories, as follows:

Setting the Goals	Steps 13-14
Determining a Strategy	Steps 15-18
Drafting a Plan	Steps 19-20
Obtaining Funding and Resources	Steps 21-27

In the following sections, we use some terms that are likely to have different meanings to different readers of this manual. To help overcome any confusion that might arise, we have included Table 4.2. The table presents a list of terms, a definition for each term, and one or more examples. We suggest looking at Table 4.2 now; then, refer back to it as you read the material that follows.

Setting the Goals

In goal-setting, the committee's task is to clarify the long-term goals toward which its efforts are directed. To do this, the study committee answers the question: What are the specific end result that our group wishes to accomplish? Based on its previously developed knowledge and understanding of the issue, the study committee identifies its long-range vision or ideal. For example, the study committee might want to work toward an urban mass transit system or a region-wide solid waste disposal system. Similarly, a group of teachers might look forward to the time when all elementary students in the school district experience a week-long residential environmental education program.

The goals represent the specific end results of actions the group could take. At this point the goals need not be detailed -- they simply refer to a "desired end state." Later, decisions will be made about a strategy for accomplishing the goals and a detailed plan of action will be developed.

Some examples of goals are:

- an environmental education teacher-training program for all teachers in the school district;

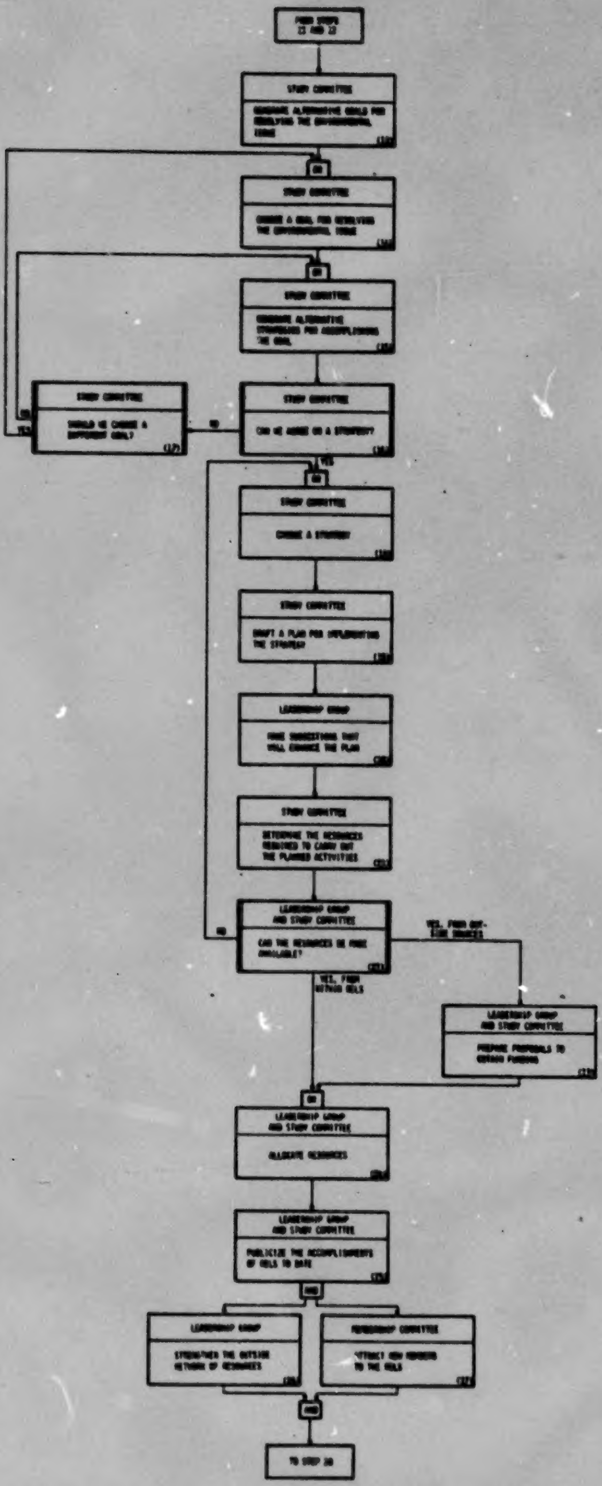
FROM STEPS 11 AND 12
STUDY COMMITTEE
GENERATE ALTERNATIVE GOALS FOR RESOLVING THE ENVIRONMENTAL ISSUE
OR
STUDY COMMITTEE
CHOOSE A GOAL FOR RESOLVING THE ENVIRONMENTAL ISSUE
OR
STUDY COMMITTEE
GENERATE ALTERNATIVE STRATEGIES FOR ACCOMPLISHING THE GOAL
STUDY COMMITTEE
SHOULD WE CHOOSE A DIFFERENT GOAL?
(17)
NO
YES
NO
STUDY COMMITTEE
CAN WE AGREE ON A STRATEGY?
YES
OR
STUDY COMMITTEE
CHOOSE A STRATEGY
STUDY COMMITTEE
DRAFT A PLAN FOR IMPLEMENTING THE STRATEGY
LEADERSHIP GROUP
MAKE SUGGESTIONS THAT WILL ENHANCE THE PLAN
STUDY COMMITTEE
DETERMINE THE RESOURCES REQUIRED TO CARRY OUT THE PLANNED ACTIVITIES
LEADERSHIP GROUP AND STUDY COMMITTEE
CAN THE RESOURCES BE MADE AVAILABLE?
NO
YES, FROM OUTSIDE SOURCES
YES, FROM WITHIN NELS
LEADERSHIP GROUP AND STUDY COMMITTEE
PREPARE PROPOSALS TO OBTAIN FUNDING
OR
LEADERSHIP GROUP AND STUDY COMMITTEE
ALLOCATE RESOURCES
LEADERSHIP GROUP AND STUDY COMMITTEE
PUBLICIZE THE ACCOMPLISHMENTS OF NELS TO DATE
AND
LEADERSHIP GROUP
STRENGTHEN THE OUTSIDE NETWORK OF RESOURCES
MEMBERSHIP COMMITTEE
ATTRACT NEW MEMBERS TO THE NELS
AND
TO STEP 28

Figure 4.4: Decisions for Resolving an Environmental Issue

Table 4.2: DEFINITIONS AND EXAMPLES OF TERMS USED IN CHAPTER 4

TERM	DEFINITION	EXAMPLES
Goal	• for resolving the environmental issue or theme • the desired end state that will result when the issue is properly resolved	• to teach regional environmental planning in the secondary schools • to preserve and enhance the Mississippi riverfront in this city
Strategy	• for accomplishing the goals • the broad course of action undertaken to reach a goal	• work with high school teachers and regional planners to develop a curriculum on regional environmental planning • set up a task force to study the Mississippi riverfront and make recommendations
Plan	• for implementing the strategy • a program for action • comprised of projects and activities that specify the actions needed to achieve the goal • includes plans for evaluation	• a curriculum on regional environmental planning • recommendations for the Mississippi River Corridor
Project	• for carrying out the plan • comprised of one or more activities • the actions that are undertaken by a project team	• workshops, students' workbook, and teachers' guide • designate the Mississippi River as a State Critical Area
Activities	• for carrying out the plan • one or more activities may be combined into a project • characterized by specific end results, specific starting and ending dates, and required resources	• hold six workshops • write and field test a teacher's guide • Metropolitan Council recommend specific standards to protect the riverfront

- a citizen's advisory board to advise local industry on environmental concerns;
- a regional solid waste management program to encourage the recovery and use of energy and materials from refuse; and
- a public transportation system to serve more people at a low cost.

Some important characteristics of goals are:

• Specificity	Is the goal a focused and explicit result? Examples: teacher training program citizens advisory board regional solid waste management program public transportation system
• Performance terms	Does the goal clearly state what the group will be doing when it reaches its goal? Example: operating a resource recovery facility
• Involvement	Does the goal clearly involve the group?
• Challenge	Does the goal excite and challenge the group?
• Realism	Is the goal attainable under present circumstances?

Determining a Strategy

A strategy is a broad course of action which the group undertakes to accomplish its goal; it begins to take shape when the study committee chooses a goal. It is further defined when the goal is coupled with a program of actions -- that is, a plan to reach the goal. Once the goal has been set, the question is: How are we going to accomplish this goal? The committee begins to move toward its goal by determining a course of action selected from among alternatives as the best way to achieve the goal and the major intermediate outcomes, or results, that must be accomplished to obtain the goal.

At this point, even without the details, certain outcomes will seem more plausible than others. However, the committee should not settle for the first, most "obvious" solution. By taking time to discuss various options, the committee members can be more creative and increase the likelihood of choosing the "best" solution. Also, since good ideas can emerge from poor ones, the idea-generating discussions should be managed in a way that allows everyone who has an idea to bring it forth without fear of having it "shot down" immediately. At first, the purpose is simply to get the ideas on the table. No suggestion, however undesirable, is rejected. Sometimes an individual will have an idea but be afraid to bring it forth. Seeing everyone else's suggestions accepted with an open mind may stimulate the individual because he or she may believe his or her own is bettter than theirs. If less desirable proposals are not put forth an individual might not be stimulated to share his or her own, perhaps better, ideas.

Drafting a Plan

Previously the study committee selected a strategy, which is a broad course of action for resolving the environmental issue. Probably the group has some activities or projects in mind that will comprise the plan. The committee should consider many possible projects, as it attempts to answer the following question:

- What activities will be implemented to accomplish our goals and strategy for resolving the environmental issue?

Each of these activities is characterized by:

- specific end results,
- specific starting and ending dates, and
- required resources (personnel, money, etc.).

In addition to the specific activities, the plan should include the critical events that must occur in getting from the present state to the desired end state. An example of such a plan is Figure 4.5, which is a Gantt chart for an environmental education proposal. Notice that the chart conveys a great deal of information about the activities and the time frame of the project in a limited space. Such a chart can be very useful during proposal preparation and project implementation.

Tasks	1979			1980								
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Environmental Learning Modules												
Develop a method for designing modules	▨	▨	▨									
Select topics for the modules	▨											
Gather resource materials	▨	▨	▨									
Prepare lesson plans for the modules		▨	▨									
Field test the modules				▨	▨	▨	▨	▨				
Evaluate the modules and field test				▨	▨	▨	▨	▨	▨			
Revise and distribute the modules									▨	▨		
Interpretive Structural Modeling												
Revise the Teacher's Guide to ISM	▨											
Teach ISM to the cooperating teacher	▨	▨	▨									
Incorporate ISM into the modules		▨	▨									
Develop software for a microprocessor	▨	▨	▨									
Teacher's Workshop												
Plan, carry out, and evaluate a teacher's workshop based on the modules							▨	▨	▨	▨		
Reporting												
Write a final report											▨	▨
Write a journal article											▨	▨

Figure 4.5: Gantt Chart for Environmental Education Proposal

Because the leadership group wants to insure that the rationale for the RELS is protected, it will probably want to make suggestions to the study committee during this time.

Obtaining Funding and Resources

A very important aspect of project planning is determining the resources (personnel, money, equipment, etc.) required to implement the project and, even more important, making those resources available. In many instances, this means obtaining funding from outside sources by writing proposals. In other instances, it means locating and training volunteers to do the work required.

Careful attention to budgeting provides for maximum utilization of available resources. Resources include:

• human effort	usually the largest and most important resource that a group has,
• materials	the "things" used to carry out a particular project, and
• facilities	including buildings, rooms, equipment, etc.

Resources are limited; consequently, grand plans and high hopes may be dashed when this reality sinks in. It is easy to underestimate the resources required to carry out even the simplest project, or to overlook something that will be needed once a project is underway. By this time the RELS leadership group and members probably have developed contacts with various resources (people, organizations, agencies) in the region. These contacts should be helpful as the study committee considers how to actually accomplish the projects it proposes. If proposals must be written to receive outside funding, the contacts the RELS has developed will surely be helpful. This is an excellent time to do publicity about the work of the study committee up to this time. Also, when funding is received, either from outside sources or from within the RELS, publicity about the projects and activities about to be implement is also appropriate.

Actions to Resolve an Environmental Issue

Overview of Action

Once funding is obtained and the plans are finalized, the work of the study committee is usually done. The responsibility now falls to various project teams to implement the activities. Their progress is monitored by the RELS leadership group and the study committee, and modifications are made, if needed. Careful documentation is made of all aspects of the project team's work. As the planned activities near completion, the study committee and the project team consider possible strategies for continuing the work done by the team. This depends on the nature of the activities carried out thus far. If a continuation strategy is developed, the RELS leadership group acts to officially turn over responsibility to the selected agency or organization.

In summary, action (Figure 4.6) includes steps 28-39, which fall into two categories:

Implementing the Projects	Steps 28-34
Developing a Continuation Strategy	Steps 35-39

Implementing the Project

By this time the study committee has put a lot of effort into researching the issue and developing plans for resolving it. Yet, unless the projects are implemented, these efforts will be wasted. Therefore, successful implementation of the projects deserves a lot of effort. Preliminary steps have been taken in budgeting, scheduling, and obtaining resources. Once resources are in hand, final plans are made. This includes selecting a project team to actually carry out the activities. (Refer to Table 4.2 for definitions of "projects" and "activities.")

In some instances, the members of the study committee will also serve as the project team. However, during the previous membership development and network building efforts, others may be identified who could also serve on the project team. Possibly, depending on the nature of the project, the team could consist of agency

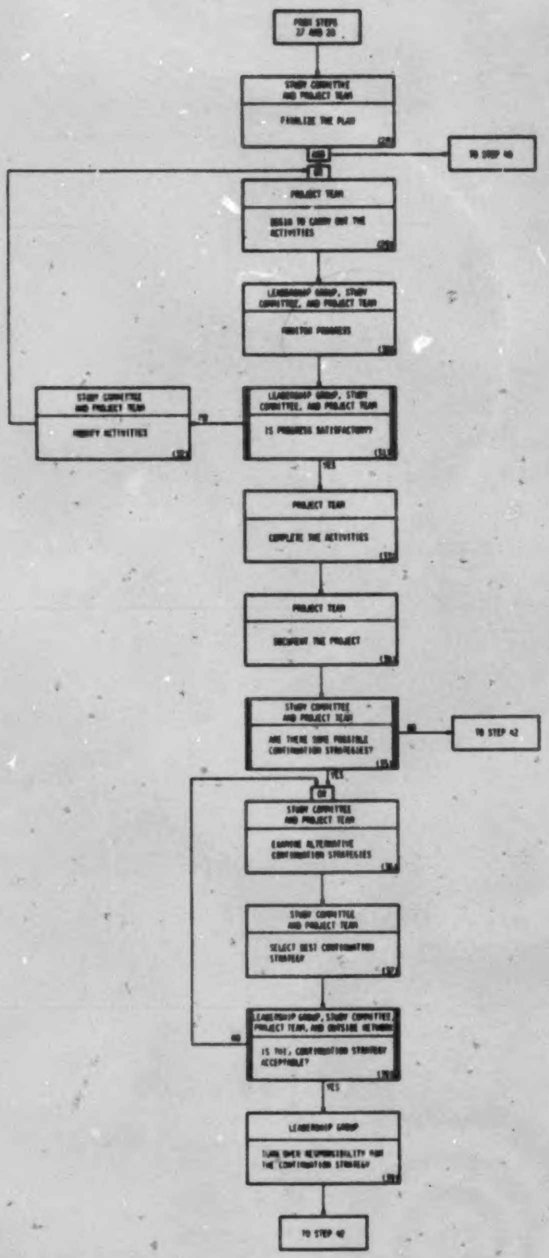
FROM STEPS 27 AND 28
STUDY COMMITTEE AND PROJECT TEAM
FINALIZE THE PLAN
AND
TO STEP 40
OR
PROJECT TEAM
BEGIN TO CARRY OUT THE ACTIVITIES
LEADERSHIP GROUP, STUDY COMMITTEE, AND PROJECT TEAM
MONITOR PROGRESS
STUDY COMMITTEE AND PROJECT TEAM
MODIFY ACTIVITIES
(32)
NO
LEADERSHIP GROUP, STUDY COMMITTEE, AND PROJECT TEAM
IS PROGRESS SATISFACTORY?
(31)
YES
PROJECT TEAM
COMPLETE THE ACTIVITIES
PROJECT TEAM
DOCUMENT THE PROJECT
STUDY COMMITTEE AND PROJECT TEAM
ARE THERE SOME POSSIBLE CONTINUATION STRATEGIES?
(35)
NO
TO STEP 42
YES
OR
STUDY COMMITTEE AND PROJECT TEAM
EXAMINE ALTERNATIVE CONTINUATION STRATEGIES
STUDY COMMITTEE AND PROJECT TEAM
SELECT BEST CONTINUATION STRATEGY
(37)
LEADERSHIP GROUP, STUDY COMMITTEE, PROJECT TEAM, AND OUTSIDE NETWORK
IS THE CONTINUATION STRATEGY ACCEPTABLE?
NO
YES
LEADERSHIP GROUP
TURN OVER RESPONSIBILITY FOR THE CONTINUATION STRATEGY
TO STEP 42

Figure 4.6: Actions to Resolve an Environmental Issue

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employees, county commissioners, and so on. The members of the project team should clearly understand what is to be done, when it is to be done, and how to report on their progress and results.

In appointing a project team, the study committee should:

- identify individuals and agencies whose participation or cooperation is needed for successful implementation;
- specify a strategy for gaining the commitment of those individuals or agencies;
- define the "critical mass" of people, commitment, resources, and so on necessary for implementation to commence;
- develop a plan for getting that commitment of the "critical mass;" and
- develop a monitoring system to assess the progress during implementation.

A well-written plan provides a set of guidelines for monitoring progress of the plan. The project team can make some changes as needed. Also, the leadership group and the study committee monitor progress and could suggest changes. Flexibility, adaptability, and creativity are key words to keep in mind throughout the project implementation. Making changes should not be seen as negative; taking corrective action is normal and constructive.

The results of the action process should be documented for several reasons:

- to help with evaluation,
- to serve for future reference, and
- to use for RELS institutionalization activities in Phase 3.

Throughout the action process many documents have been prepared, including: project designs, project budgets, project schedules, and guidelines for monitoring. Additional documentation might include photographs, newspaper clippings, films, and so on. All of these should be collected and summarized in a report on the project. This report provides a starting point for the evaluation of the project and the RELS.

Developing a Continuation Strategy

As the project team nears the end of its work, it should consider the possibility of continuation strategies. That is, the work may require follow-up or more permanent attention. It may be more appropriate to assign responsibility for ongoing management to some agency or organization. As the official representatives of the RELS, the leadership group is responsible for turning over the project to the designated agency.

The necessity for a continuation strategy depends on the local situation and the nature of the projects. For example, a continuation strategy for a small nature center started by a RELS project team might be that the center is taken over by the county park district or the Scouts. On the following page a somewhat lengthy description of the RIVERDESIGN DAYTON project is included to show how a continuation strategy can be incorporated into the plan developed by the issue study committee. In this case, the urban design team of architects' and citizens' panel filled the role of the study committee. Since this plan was completed in 1976, responsibility for implementation and continuation has fallen primarily on the River Corridor Committee. However, specific projects recommended in the plan have been implemented with funds secured from Federal agencies, state and local governments, and local citizens' groups. The River Corridor Plan is an integral part of the overall regional development plans for the Dayton area.

Evaluating the Issue Resolution Cycle and the RELS

Overview of Evaluation

During the early steps of the issue resolution cycle a great deal of effort was made to establish a common appreciation of collective inquiry and action on the selected environmental issue. That appreciation included an understanding of why action was needed, who was responsible, and what factors had to be considered. Those early planning steps involved looking ahead and anticipating what would happen if certain actions were taken. Evaluation, on the other hand, involves looking back to determine the value of

EXAMPLE: RIVERDESIGN DAYTON*

RIVERDESIGN DAYTON is the latest in a series of efforts by the citizens of Dayton and Montgomery County, Ohio, to improve the Great Miami River Corridor. These efforts had their beginning in 1913, following disastrous flooding of the Miami River. Shortly after the 1913 flood, the Miami Conservancy District was formed to provide flood protection for the Miami Valley by building dams, retaining basins, and channel improvements. More recent efforts to develop the river's potential as a source of beauty and recreation include studies initiated by the Miami Conservancy District, the Miami Valley Regional Planning Commission, and other agencies. After a highly successful Urban Design Conference in 1967, the Dayton Area Chamber of Commerce established a River Corridor Committee to "sponsor planning for improvements in the corridors of the Miami River and to set in motion the processes by which some or all of these plans can be realized." The "Great Miami River Study" of 1972, prepared by a planning consultant to the River Corridor Committee, identified the downtown portion of river as "the key stretch. . . , and the most critically important for the future of the entire river corridor plan." To focus energies here, the River Corridor Committee designated a task force that would select architects for detailed urban design of the Miami River as it flows through the City of Dayton. This urban design project, named RIVERDESIGN DAYTON, took place from April to November 1976.

The RIVERDESIGN DAYTON project was carried out in two phases. Phase I was an urban design analysis and proposal for the 4-1/2 mile long downtown portion of river corridor, including adjacent properties that could be linked with the river. Development opportunities were set forth clearly in the plan. Phase II was the architectural design of chosen proposals; it took place immediately following the first phase in order to take advantage of the enthusiasm engendered by Phase I. This close tying-together of a written plan and its implementation is often missing from planning endeavors. It carries the hope that the impetus from Phase II will keep RIVERDESIGN DAYTON from becoming a mere filed report. The architects devised an approach in both phases that provided an effective process for community input. Proposals for projects of varying sizes were made; care was taken to provide small-scale projects which could be started quickly by sponsoring civic groups. Finally, the architects outlined a strategy by which their proposals could be implemented.

To do all this within the 31-week duration of the RIVERDESIGN project the architects opened a storefront office at a busy downtown location. Hundreds of people came to the office to share their ideas with the architects, who worked daily in full view of passersby. More formalized arrangements were also made for ongoing citizen input -- a RIVERDESIGN Panel met six times, walking the length of the river study area, contributing ideas to the plan, responding to the architects' ideas, and addressing implementation of the plan. The most unique opportunity for citizen involvement in the project was the use of public television to acquaint viewers with RIVERDESIGN DAYTON, to solicit viewers' ideas, to present design proposals, and to address implementation of the plan. A total of six hour-long television shows, called DESIGNATHONS, were aired during the project.

Throughout the project people frequently said to the architects: "Don't give us a pipe dream; make sure that whatever you propose is financially feasible." The architects responded to this important concern by taking a somewhat unconventional approach they called "Situationist Design". It seeks out opportunities for available parcels with real possibilities of implementation. High cost does not necessarily mean that a proposal is not feasible; a big idea that returns high profits might be more attractive to investors than a less costly proposal. Some proposals may return no financial profits at all and must fall into the category of public improvments. Timing is important -- some proposals in the plan should be undertaken immediately, while others ought to wait for the development of complex financial packages or for momentum generated by a few early successes. Each proposal stands on its own merits, yet each fits into the total plan for the river corridor.

The strategy for implementation concentrates on the stretch of river closest to the central business district where improvements would be most visible and benefit the greatest number of people. The strategy also shows how the chosen proposals for the downtown zone eventually could lead to implementation of proposals over the full length of the study area. It establishes a sequence that should be responsive to the availability of funding. Carrying out the sequence is the responsibility of the Implementation Task Force appointed by the River Corridor Committee. The sequence of projects is divided into those of primary and those of secondary priority, but the list is intended only as an organizing aid. The "situationist" approach to urban design carries over into implementation. Since all the proposals would bring pleasure to people and have the support of the community, the lot of them could properly assume a sequence dictated by the availability of funds. The plan recommends specific proposals for improving the River Corridor, presents a sequence for implementing those projects, and indicates a funding source (public, private, or both) for each project. The RIVERDESIGN Plan, then, incorporates a continuation strategy into the implementation strategy for the Plan itself.

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*This example is based on the report of the RIVERDESIGN DAYTON project. (River Corridor Committee, 1977) what has taken place. Again, the end product is a shared appreciation, but this time it is a common way of understanding and valuing the outcomes of actions. Because evaluation results in learning, it is not the endpoint of activity. Within the context of RELS' evolution through phases, evaluation is really preparation for the next phase and for subsequent issue resolution cycles.

We are advocating an approach to evaluation which emphasizes the importance of the local context. Since it is likely that the RELS members will be doing their own evaluation, rather than hiring outside experts, the evaluation should be planned to utilize skills already acquired, rather than require the learning of new "evaluation skills." We suggest that it is certainly possible for the RELS members to do the evaluation study, because the skills needed for evaluation -- ability the observe, question, analyze, and interpret -- are skills many people already have at their command. When motivated by the sincere desire to understand more about the RELS, and by a willingness to work hard at evaluation, RELS members should be able to develop and implement an evaluation plan that truly matches the particular resources, interests, and local setting of their RELS.

The purpose of the evaluation is to give the project team, the issue study committee, and the RELS leadership group a chance:

- to learn from their experiences,
- to build the competence of the group for future issue resolution cycles and project implementations, and
- to look at the way the RELS is dealing with environmental issues in the community.

In summary, evaluation (Figure 4.7) includes steps 40-46. These steps fall into three categories, as follows:

Designing an Evaluation Plan	Step 40
Collecting Data for Evaluation	Step 41
Evaluating the Issues Resolution Cycle and the RELS	Steps 42-46

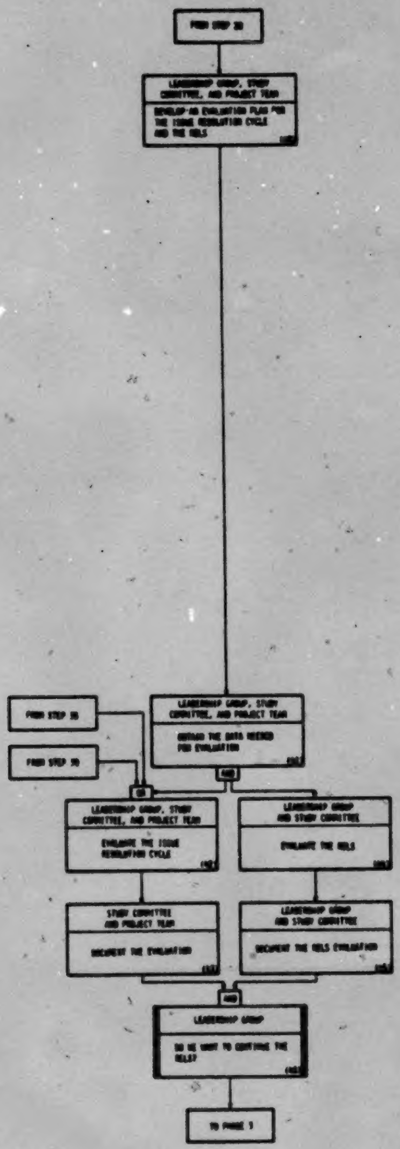

FROM STEP
LEADERSHIP GROUP, STUDY COMMITTEE, AND PROJECT TEAM
DEVELOP AN EVALUATION PLAN FOR THE ISSUE RESOLUTION CYCLE AND THE RELS
FROM STEP
FROM STEP
LEADERSHIP GROUP, STUDY COMMITTEE, AND PROJECT TEAM
OBTAIN THE DATA NEEDED FOR EVALUATION
AND
OR
LEADERSHIP GROUP, STUDY COMMITTEE, AND PROJECT TEAM
EVALUATE THE ISSUE RESOLUTION CYCLE
LEADERSHIP GROUP AND STUDY COMMITTEE
EVALUATE THE RELS
STUDY COMMITTEE AND PROJECT TEAM
DOCUMENT THE EVALUATION
LEADERSHIP GROUP AND STUDY COMMITTEE
DOCUMENT THE RELS EVALUATION
AND
LEADERSHIP GROUP
DO WE WANT TO CONTINUE THE RELS?
TO PHASE 5

Figure 4.7: Evaluating the Issue Resolution Cycle and the REL S

Designing an Evaluation Plan

Approaching evaluation as an opportunity for learning will help determine how much effort should go into the evaluation. There are valuable lessons to be learned from any activity, so do allow adequate time for evaluation. This means designing the evaluation plan early -- we suggest that this be done not later than at the time when the study committee and the project team are finalizing the plans for carrying out the activities. In some cases, the group will develop an evaluation plan during proposal preparation. In any case, the evaluation plan should be sensitive to the local context -- taking into account the concerns of the people who comprise the project team, the study committee, and the RELS leadership group.

It is likely that the leadership group, the study committee, and the project team each have different expectations when it comes to evaluation. Probably each will want to participate in designing the evaluation plan, or perhaps even develop its own plan. If the latter situation occurs, then the different components of the plan should be coordinated and compatible to avoid duplication of efforts and working at cross purposes.

In designing an evaluation plan, several important decisions are made. These include:

- deciding whether to focus on the process of the program or the output or impact of the program;
- deciding whether to make RELS responsible for the evaluation or to seek outside help; and
- deciding what the responsibilities for the evaluation are -- the steps to be taken, the questions to be asked, and the data to be collected.

What follows is a description of an evaluation study for the Little Tennessee Valley Educational Cooperative (LTVEC). Greater detail on the study appears in the Volume 5, Evaluating a Regional Environmental Learning System.

The state Department of Education commissioned a panel to conduct the LTVEC evaluation. The panel consisted of four leading citizens, who were to complete their work within one month. The panel met with the state Commissioner of Education, the executive director of the LTVEC, and the LTVEC board of directors to discuss the development of the evaluation plan. Through these discussions a list of questions was developed that would serve as the basis of the panel's inquiry.

The evaluation plan was developed to rely on three main methods of inquiry -- observations, interviews, and document analysis. Several data sources were used with each method of inquiry. The observations of various co-op meetings were used to gain first-hand knowledge of the operations of the LTVEC. Interview questions and the interview format differed depending on who was being interviewed. Many documents, such as minutes, newspaper clippings, and instructional materials, were analyzed.

Volume 5, Evaluating a Regional Environmental Learning System, contains a complete description of the evaluation findings of the panel, with a section on the co-op's environmental education program, and recommendations to the LTVEC. We recommend reading the more detailed account, especially if you are designing an evaluation plan for your environmental education program.

Also described in Volume 5 is an evaluation plan for an environmental education project that consisted of a series of workshops intended to provide teachers and administrators with information about present and potential environmental issues in the region. The project was intended to help the participants integrate this information into their own perceptions and values, and to encourage them to incorporate the new insights into their teaching of the regular curriculum. Once again, Volume 5 provides a great deal of information on the evaluation plan for this project, including suggested questionnaires and interviews.

A third evaluation plan discussed in the volume on evaluation is one for an environmental study committee, working to resolve a single environmental issue in a region. In this case, the study committee chooses to conduct a "self-study" of its own operations, relying on both internal and external resources to do this. Motivating this evaluation is a concern expressed both by critics of the study committee's collective inquiry and action process and by committee members themselves; they are concered about possible bias in the committee's work. The specifics of this evaluation plan include:

- identifing representative value-laden issues before the committee,
- reviewing the committee's written materials and actions,
- compiling instances of possible bias recognized by members of the committee, and
- analyzing and presenting evidence of bias.

Collecting Data for Evaluation

The evaluation plan should address the question of how the needed information will be collected. Two effective means for getting feedback are questionnaires and interviews. These should be carefully designed to enhance the learning aspects of the evaluation process. Too often questionnaires simply confirm a general feeling that things have gone right or wrong or somewhere in between. They are more useful when the results indicate ways to improve the next time. Interviews also need to be carefully designed to provide the desired information. It is easy to get sidetracked during the conversation with the interviewee.

Whatever method is used to collect data, the following points can be helpful:

- Use the stated goals of the project as the basis for questions used to gather data.
- Consider questioning people with different perspectives on the performance of the group. (Don't necessarily limit the survey to the group.)
- Avoid general questions; be specific but don't ask questions so biased that they only produce the answers you want to get.
- Use simple, direction questions, free of jargon and terms familiar only to you.
- Organize and summarize what is collected.
- Communicate the results.

Give careful consideration of how the collected information will be used. People resent participating in an evaluation which simply fills a file drawer somewhere and has no effect on the future actions of the group. In some situations, it is essential to respect the confidentiality of the participants, so provisions should be made to handle the data to preserve confidentiality.

Evaluating the Issue Resolution Cycle

The evaluation data should be summarized in a way that gives an overview of the responses. The results can then be analyzed to understand why things happened the way that they did. This allows the group (project team, study committee, or leadership group) to learn from the experience, which is really the reason for evaluating in the first place. Time and effort spent learning from the experiences up to now will be repaid when the group begins another issue resolution cycle at some future date. Questions such as the following can help the group evaluate the issue resolution cycle. The questions are grouped into several categories. They are written in general terms and should be adapted to fit the particular situation.

Goal

Was our goal realistic?
Was our goal accomplished?
How well did we do?
Was our achievement average, better, or worse than previous experiences?

Process

How well did the group do at collective inquiry and action?
How good was the leadership?
How well did we work as a group?
How could we become more effective and efficient?
How good was communication?

Others

Did we learn any new skills?
Were attitudes changed or reinforced?
Did problems arise as we worked?
Were there any unexpected results?

Evaluating the RELS

The leadership group should give special consideration to evaluating the RELS itself -- how it has evolved this far, how it functions to resolve issues and so on. We suggest that this evaluation look at the various aspects of the RELS, in an attempt to get an overall picture. Both the RELS evaluation and the evaluation of the issue resolution cycle are used by the leadership group as it answers the question, "Should we continue the RELS?" In answering this question, it is important to balance success (or failure) at resolving a particular environmental issue with the success or failure of the collective inquiry and action process. That is, a project team might not have been able to implement the plan in a completely satisfactory manner. However, both the study committee and the leadership group might decide that the quality of the collective inquiry effort was high enough to warrant trying again. The evaluators should take care to look at the whole picture before drawing any conclusions about the success or failure of the RELS.

The following questions should be helpful to the group evaluating the RELS:

Members

Who are the members of the RELS?
Are they representative of the region's population?
Who are the leaders of the RELS?

Network

What resources are available to the group?
What resources does the group use to accomplish its goals?
What kinds of cooperative relationships exist within the RELS and with those outside the RELS?

Environmental Issues

What region does the RELS cover?
How was this region determined?
What are the environmental issues in the region?
How did the group choose the issue it decided to address?

Task Accomplishing Process

Who does whatever tasks the RELS decides to do?
What is done to convince people to do the tasks that RELS wants done?

Summary

In this chapter we have presented step-by-step guidelines for the primary processes of collective inquiry and action -- dialogue, decision, action, and evaluation. To do this, we have used a combination of "road maps" and prose descriptions -- the "travel guide." These steps, the issue resolution cycle, are undertaken by the members of the RELS to resolve an environmental issue in their region. Initially, the issue resolution cycle occurs during Phase 2, on an experimental basis. Then, during Phase 3, as the RELS is institutionalized within a region, the issue resolution cycle occurs repeatedly. The following three chapters will describe the development of the RELS through three phases, with an emphasis on the secondary processes of collective inquiry and action.

Chapter 5

PHASE 1 -- MOBILIZING INTEREST IN THE RELS

Introduction

In previous chapters, we have described the needs that prompt people to form networks such as RELS. People and organizations will be attracted to the notion of collective inquiry and action, though perhaps not specifically to a "Regional Environmental Learning System" by name, because they share two things. First, they will have a common concern about environmental quality in their region. Secondly, they will be prompted by an awareness that current resources are inadequate to resolve the issues. RELS would offer a new approach for expanding the resources and improving the way issues are understood and resolved. In a sense, RELS participants are motivated by self-interest -- traced to their jobs, positions, or personal perspectives. The challenge of the mobilization phase is to pool these diverse interests in an organized way so that people increase their potential for addressing the issues they have in common.

Usually efforts like RELS can be traced to one person (or a small group of people) "who is perceived as important in some way, who is known to many people, and who has persistence. We do not regard affluence as a necessary characteristic, because we have known many individuals in poverty areas who organized and galvanized people to direct their energies to a particular issue or course of action" (Sarason, 1977). This organizer of the network, Sarason goes on to say, must also have ideas that will catch people's attention and bring them together voluntarily. He believes the Essex network developed so quickly in large part because the organizer was so committed to and clear about her ideas, specifically resource exchange. This made early meetings interesting and stimulated people's imaginations.

Initially, the organizers of a RELS may be prompted by concern over one specific issue. For example, a principal may decide that the environmental curriculum in that school has not had the desired effect on students. Or perhaps, as in Alabama, a group of people may decide that roadside litter and trash is becoming a problem. As a result, they may form a cleanup committee.

In both cases, the person or group organizing the effort would probably find it helpful to involve others in learning about the issue and taking the steps to resolve it. Chances are the one-time effort would be rewarding for the participants and produce some lasting good effects.

It is also possible that this initial effort could lead to a longer term relationship among the participants. Instead of leading a one issue group, the organizers may be able to use that issue in a way that leaves the region with a new structure for addressing environmental education issues. The Regional Environmental Learning System we describe is that longer term result. Whether or not it occurs depends on a series of conditions and actions. In this chapter, we discuss what should occur in Phase 1 in order for a RELS to develop.

Assumptions at the Beginning of Phase 1

How does a RELS differ from a one issue or pressure group? What can be done to create a foundation for a longer term effort? The key to RELS' continuous development is broad-based support cultivated from the very beginning of Phase 1. Without this, the networking effort is likely to be short-lived and halfhearted.

In order to achieve this kind of support, organizers should check for two preconditions. At least one of the following must exist:

1. There is *at least one regional issue or theme* involving the environment or environmental education that is not being addressed to your (the organizer's) satisfaction. This issue or theme must be an appropriate vehicle for collective inquiry and action.

2. There is a desire in the region to address environmental education *themes and issues in general* through a process of collective inquiry and action.

The RELS-like network of the Alabama Environmental Quality Association can trace its beginning to the first condition. The Citizens League, on the other hand, is an example of a RELS that was organized from the beginning to identify and address regional issues in general.

Note that the two-track development of RELS is already apparent in Phase 1. First, there is always an orientation to resolving issues that keeps RELS from being a mere discussion group. But there is also an underlying commitment to a specific process -- building a network for collective inquiry and action -- that puts each issue resolution in proper perspective. Thus, a successful RELS is one that can survive an occasional "failure" to resolve an issue. What endures is the interest and potential to tackle other regional issues. These two concerns must be balanced throughout RELS development; the organizers must be sensitive to both from the outset of mobilization.

The Outcomes of Phase 1

Phase 1 includes two sets of activities: planning activities in which participants will choose a way to proceed and the first issue; and mobilizing activities that produce commitment to the plan. Together, these activities should lead to the following outcomes:

1. A Decision on How to Organize

By the end of Phase 1, the RELS organizers and a group of potential members should reach agreement on a process for choosing, if necessary, and addressing an issue. In other words, one outcome is the group's decision on how they are going to work together. Both the organizers and invited participants will bring their own expectations and assumptions to the first RELS meetings. The first step in the collective inquiry and action process is to establish a common appreciation of what the network approach might offer the group. The organizers should guide the early participants in drawing up a rough or preliminary design of their RELS process, but not necessarily a design for RELS as a formal institution. For example, during the course of Phase 1, certain people should be assigned responsibility for providing leadership and for conducting the group meetings to select the first issue. Contacting the appropriate people and choosing decision-making techniques (see Volume 4, Conducting Collective Inquiry) are two other ways to set a direction for the RELS.

2. Choice of the First Issue

If the potential RELS members did not come together originally because of a specific issue, one of the tasks of Phase 1 is to select an issue of common concern. How the group goes about this task will be determined by the rough design of the RELS the group agrees to use. For those involved in the community education sector, the issue may pertain to the quality of the regional environment or ways to educate the public. Those involved in formal education may be more concerned with environmental themes that affect their region.

Both the issue itself and how it is selected are crucial to the further development of RELS. Because this first issue will be used to test the network approach, the RELS organizers should be careful to guide the group in setting some criteria. (See Table 5.1 for some suggested criteria.) Basically, the issue should be: 1) of regional concern, and 2) serious, yet practical, enough to invite people's participation.

3. Commitment to Try an Initial Experiment Using Collective Inquiry and Action

One of the purposes of the mobilization phase is to determine the potential, needs, and motivation of people in the region to develop a RELS. What commitments can be obtained? Locating possible participants with complementary needs and interests will usually be more time-consuming than the organizers expect. There is, of course, no need to conduct an exhaustive search for likely RELS participants in the first phase of RELS development. What is needed is a "critical mass" of people and organizations whose size will vary with the situation. The number and position of people asked to participate from the beginning should be appropriate to what the RELS organizers hope to accomplish. Above all, the activities undertaken during Phase 1 should result in commitment from different levels -- whether in a school district, neighborhood, local government setting, etc. Without that kind of support from the beginning, neither the issue resolution nor the RELS-building are likely to be successful in the long run. In choosing, and then in clarifying an issue, the potential RELS members establish a pattern for how they will work together. The pattern should encourage broad-based support for both the issue and the RELS process.

At the end of Phase 1, not everyone will be equally committed to the issue that has been chosen for the trial cycle. Some will continue to participate primarily because they are committed to the RELS ideals. For them, the issue, though not of strong personal interest, offers a good opportunity to test the emerging network. Phase 1, then, should produce a dual commitment -- to the first issue and to the RELS rationale.

Finally, by the end of Phase 1, there should be a growing belief that a RELS does exist and can be useful. Participants should be getting a clearer picture of what it is they are trying to do. Efforts should also be made to acquaint others with what is being attempted through the RELS. Attracting new members and building a reputation among outside resources helps set the stage for the first issue resolution cycle.

Steps in Mobilizing the RELS

It would be misleading and unfair to suggest that a certain formula can be followed and a RELS network will result. The three phases we are describing depict a pattern that RELS is likely to follow as it develops. Within each phase the series of personal contacts, meetings, and commitments will of course vary. And, because RELS must respond to local needs rather than a prescribed set of instructions, what works for one region can only be a suggestion for other regions to consider. At best, we can describe some of the critical events and activities that are likely to be a part of mobilizing and sustaining a RELS in any situation. The sequence may vary from what is listed here, and undoubtedly some of the activities will have to be repeated a number of times. In the chapters on Phases 1, 2, and 3, we discuss what might be considered signals to watch for as the RELS develops. The following steps are what is likely to occur in Phase 1 -- Mobilizing the RELS.

1. Define the Problem or Need

Most of Phase 1 involves contacting and working with others. This first step refers to some preliminary work for the RELS organizer(s). Before the first contact is made, the organizer should clarify his or her assumptions. Is there a specific issue calling for attention? Have there been other attempts at collective inquiry and action to resolve regional issues? What is the state of environmental education in the region? If it is an organization initiating the RELS idea, consider the strengths, abilities, and needs of the group. What could be the benefits and costs of belonging to a RELS-like network? Take time to document the needs and your rationale for a network, even if only in informal notes. It will help clarify your thinking and help you communicate your thoughts to others.

2. Consider Others Who Would Have Potential to Work toward a RELS

Your first contacts will undoubtedly be with people or organizations who are likely to share your interests. If there is a particular issue to be addressed, consider who should be involved in the effort -- or who might be a source of background information.

3. Discuss Your Idea with the Potential RELS Participants

In the example of the Essex network, Mrs. Dewar, the organizer, first contacted a number of people individually to discuss her concept of resource exchange and how it could serve the needs of individuals and organizations. She was particularly interested in how schools and colleges could interact with community agencies. She felt that a network would allow more resource exchanging, benefiting both students and working members of the community. Her concern was: How does one increase the two-way flow between school and community?

By keeping these initial contacts informal and open-ended, the organizer can get a better idea of where to start and who should be involved. It is not a question of "selling" an idea, but rather of exploring with others the possibility of mutual interests. At this point, the purpose is to assess interests and capabilities -- but not to elicit commitments. Gather the opinions and facts you need to correct your assumptions.

One important factor to be conscious of at this point is motivation. Very often people come to these early discussions with agendas of their own. It is up to the organizer to discover points where interests might complement each other and to lead the discussions in an exploratory manner.

When organizations are involved in a linkage effort, Far West Laboratories suggests that each organization's motivation for participating is important (1978). Linkage efforts work best when the organizations are highly motivated to participate, and the motivation of each organization is about equal. The RELS organizer can help the participants move toward a balance.

4. Conduct the First Group Meetings

The first group meetings can be an important milestone in the development of the RELS. The purpose is to share, in a group setting, what you have been able to conclude about the need for a RELS and to determine whether people are interested in pursuing that approach. If there is a commitment to proceed with an initial RELS design, the organizer should go on with the group of initial participants to determine the following:

- who will be affected,
- who can give an overview or support,

- who else might be interested,
- who will represent organizations (These people should be chosen on the basis of their abilities and roles in their organization.), and
- how to keep people informed of the progress of the RELS.

5. Discuss and Establish a Tentative RELS Design

As previously pointed out, one important outcome of Phase 1 is a decision on how to organize; this should be as detailed as the situation warrants. For example, if a group plans to seek outside funding to form a RELS and conduct a trial issue cycle, the organization of the RELS may have to be spelled out in some detail. Even in smaller efforts, those who have agreed to work out a RELS arrangement in the region must decide how they are going to work together.

Particular care should be given to planning for this meeting. This includes:

- inviting people who will ensure wide support, i.e., people from various levels and perspectives,
- providing background information beforehand,
- setting an agenda, and
- making room arrangements, sending invitations, etc.

In addition, consider whether formal choice-making techniques might be helpful in getting people to participate in setting goals for the RELS. For example, a group discussing alternative designs for the RELS, might take elements from the normative map of environmental education and work out a local intent structure. Here interpretive structural modeling could be helpful, using a question such as:

> "To improve the quality of life in the Dayton-Miami .
> Valley, we agree that
> ELEMENT X
> is more important than
> ELEMENT Y."

See Volume 4, Conducting Collective Inquiry, (especially the Appendix, Computer Implementation of Interpretive Structural Modeling) for more information about this type of computer-aided modeling.

The preliminary design will be amended and refined as the RELS progesses through the other two phases. What it provides is a common reference point to guide Phase 2. This "design" reflects decisions about:

- why people have agreed to work through a RELS,
- how this RELS will employ collective inquiry and action in the region,
- how the RELS will select a specific issue to test the network approach,
- what roles will be required and how leaders will be identified and prepared,
- how the RELS will enlarge its network of members and contacts, and
- what outside resources will be needed and ways to obtain them.

6. Choose and Clarify the First Issue to be Addressed

By this time, the initial organizer will probably give way to those who have assumed the role of "leaders" for the RELS. Under this newly-created leadership group, the RELS members will go about the task of applying their RELS design to their first environmental education issue or theme.

Because this is the first issue, it calls for special attention. RELS members should take time to agree on what criteria the issue should meet. An example may offer some ideas:

EXAMPLE: CHOOSING AN ISSUE

A small group of community leaders have been meeting for some time to discuss the possibility of creating a forum that would address regional issues. There is enough enthusiasm and commitment to form four task forces as a support structure for the forum's work. After a series of organizational meetings, the members are ready to develop a number of issues for consideration and to choose one. The process they use is to: 1) list 20 issues; 2) discuss each issue and why it is important; 3) list criteria for weighing the issues; and 4) select the issue(s) to be studied based on these criteria. Table 5.1 summarizes some criteria this group might use in choosing the first issue.

Finally, how the planning is done will also have far-reaching effects on the success of the RELS. The goal is broad support for the issue resolution; the key to obtaining that support is fostering participation throughout the planning and implementation. This does not mean every decision about the issue resolution has to be reached democratically -- it does mean the appropriate people should be involved at every point. People and organizations who will be involved or whose support will be needed should be encouraged to contribute to the decisions RELS makes in addressing an issue.

TABLE 5.1: SOME CRITERIA FOR SELECTING THE FIRST ENVIRONMENTAL ISSUE OR THEME

- Does it touch the whole region?
- Does some preliminary research exist?
- Is it practical? feasible?
- Is there any urgency?
- How marketable is the issue or theme?
- Is it citizen-oriented?
- Will it happen without us?
- Is consensus possible?

Summary

During the first phase of RELS' development, the organizer has the most important role. Initially, there may be one specific issue prompting interest in a RELS; or there may be a core group of people who share an interest in the concepts of networking and collective inquiry and action as ways to improve their region's environment. The challenge for the organizer is to pool the diverse interests. In this chapter, we describe three outcomes for Phase 1: a preliminary design of the RELS (i.e., how the group plans to organize); agreement on what regional issue or theme the group will address first; and commitment to try using the collective inquiry process to resolve that issue.

We also suggested six steps that summarize what should occur during Phase 1, though the timing and sequence should be tailored to the needs of the regional setting. The steps include: defining the problem or need; identifying other likely participants; assessing interest and capabilities; conducting the first meetings; working out a tentative RELS design; and choosing an appropriate issue to test the new RELS. *How* these things are accomplished is as important as what is achieved during mobilization -- the result should be a growing broad-based support for the RELS.

Chapter 6

PHASE 2: CREATING THE INITIAL RELS EXPERIMENT

Introduction

The issue resolution cycle is a recurring cycle of activities. It summarizes what a RELS is likely to go through and accomplish as it addresses any one environmental issue or theme. Phase 2 is used to describe what happens the first time a RELS undertakes an issue resolution. Like the rest of our model, Phase 2 is used to describe the assumptions, outcomes, responsibilities and steps in a general way. Each RELS, adapted to its own situation, is likely to vary somewhat from the model. What is essential is that the RELS use the first issue resolution as an opportunity to test the network that is emerging.

Chapter 4 presented a detailed description of the issue resolution process that will help RELS organizers plan and manage their first attempts. Because this is the RELS' first experiment with collective inquiry and action, however, there are additional concerns. Most important of these is to place the first issue(s) in proper perspective -- that is, the task of addressing environmental themes and issues is only one of several tasks facing the RELS. A successful RELS experiment also requires developing leaders, building membership, and strengthening ties with resources outside the network.

The key to the experiment is adaptation. In this sourcebook we can outline and describe some examples of what others have done, suggest what you might expect to happen, and even offer some tools and suggestions. But in applying these to a particular region, only you can decide how they should be used. In calling for "adaptation," we are referring to adjustments in the RELS' design or in the institutional setting or in both. Adaptation will begin during mobilization when the organizers try to refine original ideas and attract support. During the first experiment, those responsible for carrying out the RELS' strategies and precepts will see how realistic the plans were and whether there is a need for corresponding change in the setting (e.g., in personal behaviors, policies, etc.). Even in Phase 3, institutionalization, a RELS will need periodic adjustments to reflect feedback and judgments about it.

We find some striking similarities between the first RELS experiment and the "implementation phase" that educational innovations go through. The Rand Corporation (Berman and McLaughlin, 1978) studied and reported many of its conclusions under the three phases it found for projects. Implementation, the second phase, followed the funding of a proposal and permission to carry out the project. At this point, the innovation left the realm of central administrators and planners, and became the responsibility of the "project users." Whether the innovations became part of the school district's regular operations was the point of the third phase.

Rand found that adaptation was crucial to successful implementation. Sometimes users had to modify details in the original design; sometimes larger changes took place over the course of the project, following a "think-plan-do-revise" style of implementation.

> Implementation was thus neither automatic nor assured. An innovation followed one of three processes, defined by the extent to which adaptation occurred in the project and its institutional setting:
>
> 1. Nonimplementation occurred when the project neither altered its setting nor was adapted to it. Some projects simply broke down during implementation, particularly if they were very comprehensive or "overly planned" and prescribed; others were ignored or received scant attention from users, particularly if they had objectives that were trivial or peripheral to classroom concerns.
>
> 2. Cooptation occurred where the staff adapted the project, usually emasculating it, to meet their own needs, without any corresponding change in traditional institutional behavior or practices. Such projects could experience a deceptively smooth implementation.
>
> 3. Mutual adaptation occurred when both project and setting were changed. Mutual adaptation could involve a variety of adjustments to the project itself -- for example, reduction or modification of idealistic project goals, amendment or simplification of project treatment, downward

> revision of ambitious expectations for behavioral change in the staff or of overly optimistic effects of the project on students, and so on. Concomitant with these modifications in project design or objectives, new behaviors were required by project staff, as well as new attitudes necessary for integrating project strategies into classroom practices. Mutual adaptation seldom meant smooth or trouble-free implementation. Indeed, from the perspective of an outside observer, the first year or so of project operations might often be seen as chaotic, as staff tried hard to make the project work for them. (Berman and McLaughlin, 1978)

Assumptions at the Beginning of Phase 2

The activities and events that make up the issue resolution cycle follow preparation that is done in Phase 1. A new RELS, just getting underway, chooses it first issue(s) and at least a preliminary plan for organizing by the end of the mobilization phase. Subsequent issues are selected during what we describe as Phase 3 -- the Institutionalization of the RELS. Figure 6.1 shows how the issue resolution cycle is repeated.

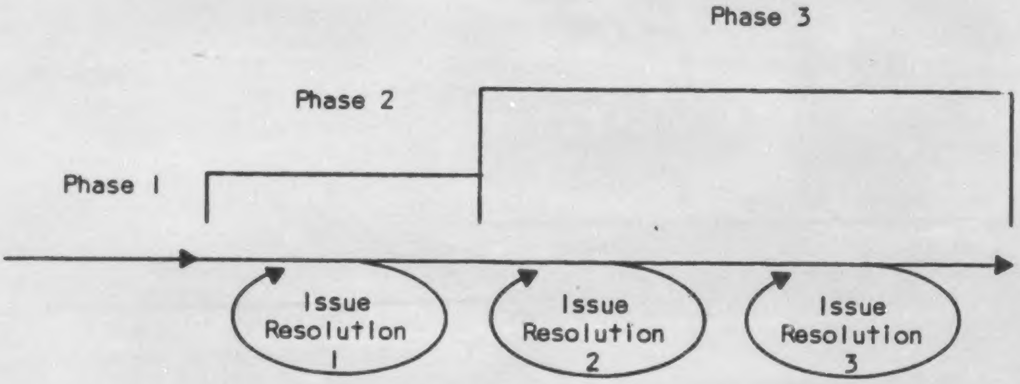


Figure 6.1

We assume the following conditions exist at the beginning of the initial RELS experiment:

1. There are a sufficient number of people who:
    - are concerned about environmental issues and education in their region
    - believe that present approaches are inadequate for addressing these issues
    - are committed to pursuing a network approach based on collective inquiry and action.

2. There is involvement and commitment by a leadership group to begin a RELS.
3. There is a membership group who are interested in and committed to participating in the RELS.
4. There is a group of people who have not yet joined the RELS, but represent additional support. These are potential members; either they have not yet been identified or they have not yet made a commitment to join the RELS.
5. There is at least one specific issue that the RELS has decided to address through its collective inquiry and action process. If it is the first issue addressed by the group it may have been the organizing force behind the RELS, or it may be the result of early RELS deliberations in Phase 1.
6. There is least a general design of how the RELS intends to organize itself while addressing the issue or theme.

The Outcomes of Phase 2

The initial RELS experiment involves translating the purpose and rationale behind the network into practice. Testing out the issue resolution cycle gives the organizers of the RELS a chance to see whether their ideas about a new regional effort are workable. In addition, the results of the cycle should leave the organizers, leaders, and members of RELS with some valuable lessons about how future efforts might be improved. The outcomes of Phase 2 are interrelated. In addressing an issue or theme, the RELS leaders and members need to develop their access to resources (both internally and outside the RELS membership). Likewise, continued growth and development of the RELS hinges on the successful use of the collective inquiry and action process. The concept of RELS as a useful entity is not likely to last in the minds of either participants or others in the region without some early success in improving environmental education. We summarize the outcomes of Phase 2 under three headings: issue resolution, the strengthening of RELS, and evaluation.

1. Outcomes Related to the Issue or Theme

There are two outcomes of the initial experiment that pertain to the issue or theme the RELS has chosen.

A. At Least One Issue Will Be Targetted and Systematically Addressed

By the end of Phase 2, RELS will have used the process of collective inquiry and action to address an environmental theme or issue important to the region. Sometimes, the experimental period might be long enough to encompass more than one issue. The point of Phase 2 is to test out the ideas and organization the RELS members have developed. Throughout this manual, we suggest guidelines for how to carry out a collective inquiry and action process. Each regional group will find ways to adapt the process to fit its needs. In general, a systematic approach would begin with an orientation for participants, followed by clarifying the issue and collecting information. This is what we call the "dialogue" of collective inquiry. The "decisions" the group must make include setting a goal, generating alternative strategies and choosing one, and obtaining the resources to support it. "Action" refers to finalizing the plan, implementation, progress checks, and devising a continuation plan if necessary. "Evaluation" -- planning for it, collecting data, and making judgments -- completes the process.

B. Participants Will Be Convinced of the Potential of Collective Inquiry and Action as a Way to Resolve Regional Environmental Issues

The whole purpose of the RELS is to provide the region with a network of resources (people, skills, decision techniques, facilities, funds, etc.) that can be used to address people's environmental concerns. Phase 2 summarizes how those resources are made available as the RELS addresses its first issue.

It is entirely possible that the issue used for the first RELS experiment will not be resolved to your complete satisfaction. The first outcome called for at least a serious attempt at the collective inquiry and action process. Other factors, however, may also affect the experiment. For example, it might become clear by the end of Phase 2 that the timing was wrong on this issue; the RELS moved too slowly or too quickly; not all the right people were involved; resource needs were underestimated; or the network was still too small to be effective on this issue. The new RELS might also discover that it follows some previous attempts in the region which made people skeptical, hostile, or simply indifferent. Each of these are serious obstacles to overcome, but the point of this second outcome is that, regardless of the immediate results, enough people are convinced that a RELS could work in the region.

This means that, despite some setbacks, people have found collective inquiry and action a satisfying experience and worth the effort. Furthermore, this feeling of satisfaction must be held by a significant number of people. The RELS will not develop as an important part of the region unless it is supported by a wide range of people. Their commitment must be voluntary, not due to a top-down order, and their efforts must be based on need, rather than a response to temporary outside funding. A RELS with broad-based support can withstand what might appear to be "failures," even the first time around.

2. Outcomes Related to Strengthening the RELS

In addition to the efforts the issue study committee directs toward one specific target, there are also some things required to build up the RELS during Phase 2. Depending on how well established the RELS is as a formal organization, this role may fall to the original organizer, the leadership group, or perhaps to a paid or volunteer staff. There are three outcomes of Phase 2 related to RELS-building, and two others pertaining to evaluation.

A. A Decision on How to "Manage" the Initial Experiment

This includes:

- establishing the functional relationship between RELS as a whole and the leaders of the issue study committee, i.e., what each is doing and how they are going to interface,

- providing support services, and
- developing procedures for collecting and disseminating information.

In a way, these are "continuation strategies" for the RELS itself, similar to the longer-term concerns the issue study committee and project team may have for their particular issue. What will happen after the experiment is completed? For RELS, how can the efforts that are being channeled into addressing one issue also be used to strengthen the entire RELS? Most importantly, how can RELS development be kept distinct and larger than the issue resolution? Both leaders and the general membership must reach agreement on these aspects of "managing the RELS."

B. A Decision on How to Enlarge the RELS

Closely related to the last outcome, this refers specifically to building the RELS in terms of size and quality. First, the RELS leadership group (or perhaps a specially appointed membership committee) should search for ways to involve additional members even as the experiment gets underway. Continuously strengthening ties with the community, and perhaps even individuals or organizations outside the region, is equally important. How effective the network is in bringing RELS members in touch with resources previously inaccessible to them will depend on these network-building efforts.

C. A More Capable Leadership and Membership Group

Two indicators of RELS' success will be strong leadership and a sense of confidence on the part of the participants. As the RELS becomes better at applying collective inquiry and action to specific issues, the number of people skilled in the process should increase. Similarly, the experience of an issue resolution cycle should foster people's motivation and ability to have a real impact on their region.

3. Outcomes Related to Evaluation

The issue resolution cycle concludes with steps that address two questions:

A. How Successful Were Our Efforts to Resolve This Issue?

B. How Successful Were Our Efforts to Develop the RELS?

The lessons derived from each issue cycle are perhaps more valuable to the RELS than the immediate results of RELS' attempts to resolve a particular issue. Chapter 4 summarizes some of the important evaluation questions to ask at the end of issue resolution. Volume 5, Evaluating a Regional Environmental Learning System, gives various approaches, instruments, and suggestions.

Steps in Creating the Initial RELS Experiment

Chapter 4 gives a step-by-step description of the collective inquiry and action process. The sequence and details of the steps are suggested, but open to local adaptation. We believe that the steps are general enough that a RELS could follow them in addressing any issue, whether the first one or a subsequent one. If it *is* the RELS' first attempt, however, there are some additional points to keep in mind. In this section, we describe the special concerns that accompany the *first* issue resolution. There are the usual steps of dialogue, decision, action, and evaluation, plus some steps that underscore the experimenting that is going on during this part of RELS' development.

1. Clarify the Roles in the RELS Experiment

As a result of Phase 1, the participants in RELS reached several points of agreement about their initial experiment. First, they agreed on at least a preliminary design for the RELS; that is, how they planned to organize and operate. They also chose an issue or theme as the focus of the first experiment, and obtained sufficient commitment to the issue and to the RELS itself.

Before the issue resolution experiment gets underway, the leaders of RELS should take time to orient those who will be involved. In a way, it is "setting the stage" for the collective inquiry and action process. Much has evolved since the RELS' first meetings and undoubtedly new people will have been attracted by the issue selected. The RELS may have even conducted a recruitment campaign by this point.

The first step in beginning the RELS experiment is to clarify what roles will be involved and who will assume those responsibilities. The exact roles, of course, will depend on how the RELS wants to organize. It is likely, though, that by now the original organizer of the RELS would give way to a leadership group. The leadership group would usually be responsible for deciding how to use available talents and interests. Appointing a study committee to carry out the collective inquiry is one likely approach. Later a separate project team may be helpful in carrying out the RELS' action. It should also be clear to participants who will coordinate the meeting arrangements and offer support services to the committees. The RELS participants should also decide what publicity, network building, training, and recruitment efforts it wants to make during the first issue cycle -- and make arrangements for them. Finally, where organizations are part of the new network, it is important to clarify how each organization intends to participate and who will be its representative.

2. Specify the Limits or Constraints or Factors that Might Affect the Experiment

Before beginning the experiment, consider the present situation. What parts of the present regional setting are likely to be affected by the RELS' experiment? What is RELS' position? Some constraints likely to affect the experiment would be:

- lack of resources
- lack of "clout," or reputation in the region
- an unfavorable attitude in the region (due perhaps, to a history of other RELS-like attempts which have failed)
- individual personality conflicts
- granting credit (where educational organizations are involved)
- legal constraints
- "hidden agendas" of participants

Decide what special efforts must be made due to these factors.

3. Put the Issue Resolution Experiment into Proper Perspective

Next, those working on the issue need to clarify for themselves what they are setting out to accomplish. The Rand study of innovations concludes that clarity about the project and goals (in this case, clarity about RELS and the exact issue under study) can make an ambitious undertaking manageable (Berman and McLaughlin, 1978). Often this clarity improves during the course of implementation, but at this point, participants need to update their understanding of what the group is setting out to do. Phase 2 demands balancing concern with the chosen issue and concern with developing a RELS. The last step in orienting the participants is to reach agreement about what standards of quality will guide the experiment. What priorities does the RELS hold? What will be most important during evaluation?

4. Test the Collective Inquiry and Action Process

Next, the issue study committee should gather the information they will need to draw conclusions about the issue and decide on a course of action. Here the leaders and/or staff of RELS may be called upon to link the study committee to appropriate sources of information. The study committee then lists alternative goals and strategies and chooses its plan. The most important criterion for the implementation strategy the RELS chooses is the degree of adaptation. It is not safe to assume that what worked elsewhere will work in your region. The first experiment is not an opportunity to try transplanting a program that was successful in another region. The whole purpose of the collective inquiry process is improve a group's understanding of an issue important to them and to reach a consensus on what to do about it. Working through a network provides access to the resources the group needs to do this. Regardless what the early visions of RELS were, the initial experiment should be appropriate to the region and RELS participants should be alert to what changes are need in the region to support a RELS.

The first issue study committee should not downplay the experimental nature of RELS this first time around. In choosing their action, the group should look for creative ways to involve and expand their network. After all, it was the search for a "new approach" to addressing environmental issues that brought them together in the first place. Avoid feeling limited by a lack of experience. Keep expectations realistic, of course, but dare to test the RELS' ideas and organization you have so far. The focus of Phase 2 should be on the learning that is occurring.

As in any experiment, careful monitoring of what happens during Phase 2 is important. Assignments should be clear and the people responsible for actually carrying out the action should have easy access to RELS' network of resources. The RELS leadership group can also offer support by coordinating the activities, setting up communication channels, monitoring progress, keeping records of events, and coordinating publicity. During this initial experiment, it may be especially important to focus publicity on the total effort -- the development of the RELS -- rather than on the one specific issue. Finally, broad-based support for the action is essential to its long-range success; RELS' ties to key people and organizations in the region can help raise this support.

Final resolution of the issue may also require the RELS to work out a continuation strategy. Few projects would remain the permanent responsibility of RELS. What RELS can do, however, is again tap its resource linkages to devise a way for an effective project to continue in the region.

The last major step in the collective inquiry and action process is a systematic evaluation of what the RELS accomplished. The RELS' goals are to:

- examine an issue,
- exchange ideas and assumptions,
- critique the ideas and adjust individual assumptions and positions, and
- select and carry out a course of action

so that members emerge with new insights and viewpoints. Two levels, then, must be evaluated: RELS performance as a network and what was achieved in addressing the chosen issue or theme. (See Volume 5, Evaluating a Regional Environmental Learning System, for types of evaluation instruments that can be used.)

5. Decide Whether or Not to Continue the RELS

At the end of the first experiment, the RELS leadership group, members, and issue study committe must decide whether the RELS has potential. The basis for this decision should be the success you have had in developing the RELS, much more than the success you might have had in addressing one particular issue or theme. Is a network emerging? Did the collective inquiry and action process prove satisfying? Is the work put into RELS worth the effort? Is there enough support in the region for something like RELS? If not, how can the support be developed?

Questions about the nature of the RELS -- its organization, policies, and size -- are addressed during Phase 3. At this point, the people in RELS have tried out a certain approach and are ready to make some decisions about future directions.

Summary

The purpose of the first RELS experiment is to test the network approach that is emerging. During Phase 2, a leadership group gradually assumes more of the responsibility for managing the RELS. Their challenge is to balance interest for the first issue or theme with concern for strengthening the RELS. The best way to assure an early success with the collective inquiry and action process is to make sure the necessary adaptation is occurring. A RELS is not something to be copied or "installed;" instead, each region must decide how the RELS design and institutional setting should be adjusted in order to make them compatible.

The experiment should be designed to give people an opportunity to see how collective inquiry and action can be used to address one important, timely environmental issue or theme. Despite some setbacks that may occur, they should find the process satisfying and worth the effort. Other desired outcomes of Phase 2 are: better organization for the new RELS; expanded membership; improved leadership skills; and systematic evaluation of how the RELS is doing.

In describing what occurs during the first RELS experiment, we pointed out that in addition to the usual steps of collective inquiry, there are some special concerns in this phase. Some suggestions for improving the chances of a successful experiment are: maintaining clarity about roles; recognizing limits and constraints; and agreeing on priorities. The last step in Phase 2 is to reach a decision about whether or not to continue the RELS.

Chapter 7

PHASE 3: INSTITUTIONALIZATION OF THE RELS

Introduction

Change efforts like RELS, even successful ones, tend to disappear. Therefore, what is done to institutionalize a RELS in a region is pivotal. In this third phase, a RELS either becomes a standard part of the region's environmental education or it is simply allowed to fade away.

Regardless of how formal a structure a RELS eventually attains, institutionalization involves establishing *legitimacy* for the network and *stabilizing* the new condition. Most likely this will not occur after one or two rounds of the issue cycle. Instead, a RELS is likely to follow the experience illustrated by our four examples. Most RELS-like networks test a number of approaches before settling into one that seems most practical and effective. The Citizens League today, for instance, is the product of some thirty years of careful thought and testing. The Little Tennessee Valley Educational Coop is *not* part of the model city originally envisioned, but it is still effective in addressing the region's education concerns. When does a RELS make the transition to an effective and recognized institution in the region? The simplest answer is: "when it is easy to use collective inquiry and action to address an environmental concern." This does not mean easy in the sense of quick and final solutions, but rather the point where people know a RELS exists, feel free to participate, and have confidence in its ability to get things done.

This picture of institutionalization has three important parts. A RELS is always evolving at three levels. There is the *process* that RELS uses, collective inquiry and action, which is the most visible level. In a way, it is like the tip of an iceberg -- easily observable to those both in and outside the RELS. It is something concrete and the RELS can work at improving the skills that are involved and achieve noticeable results. At the second level are the social structures that support the collective inquiry and action process. As the RELS grows in size and ambition, it requires clearer roles, an organizational structure, and resources -- including appropriate ties to decision-makers, as well as a talent and financial base. Accomplishments at this level may be less noticeable to an observer, but are essential to keeping the RELS going. At the third level are the ideas behind the RELS activity. These too must grow and keep pace with what the region needs and what RELS can offer. These are the ideas discussed earlier in the manual -- the concepts of environmental issues, themes, regions, collective inquiry and action, networking, etc. Who holds what beliefs by Phase 3 will be different from what initiated Phase 1. An important part of institutionalizing the RELS is clarifying what this region needs and what this network is going to do.

Institutionalization is not an endpoint, but a state of keeping these three levels in proper balance. RELS becomes an institution in the region when:

- participants in the RELS agree on a rationale;
- collective inquiry and action are a visible part of the region's environmemental education; and
- social structures are in place to support collective inquiry.

Assumptions at the Beginning of Phase 3

The initial experiment in Phase 2 offers a group the opportunity to test its ideas before committing itself to any one approach. All the things that institutionalization implies should come about slowly for a RELS -- the result of experience, not deft proposal writing. Our description of Phase 3 is based on the following assumptions:

1. RELS participants have *completed one or more issue* cycles and have *evaluated* both the issue resolution process and the RELS building efforts during Phase 2.

2. RELS participants have made a decision about *continuing the process of collective inquiry and action.*

Chapter 4 described in detail how evaluation is included in the issue resolution process. At the end of the trial cycle, our guidelines say, the participants should gather data on what occurred, analyze it, and draw conclusions about how to improve future efforts. Both the issue resolution process and the RELS itself should undergo this evaluation. The results will help determine whether the participants want to pursue the development of a RELS. A decision by the RELS members and leaders to continue the RELS is the signal to enter Phase 3. Earlier phases, of course, lay the foundation for institutionalizing RELS; Phase 3 refers to the more specific concerns that people should have after RELS has reached a certain maturity.

The Outcomes of Phase 3

We suggest that there are six outcomes of Phase 3. They often overlap and certainly reinforce each other; together they indicate the successful institutionalization of a RELS.

1. Legitimacy as an Institution in the Region

Institutionalization for RELS means making the final transition from trial issue resolution cycles to an accepted and useful part of the way the region operates. Many groups and organizations, of course, call themselves "institutions" -- and indeed part of the problem in dealing with the environment is the large number of "institutions" that have outlasted their usefulness. Our aim here is not simply to create still another "institution." Our very first criteria for success is that the RELS be recognized as filling a need in the region and that people are willing to work through it. Note that this perception of usefulness must be shared both by members and by people outside the RELS. As the Rand study found for educational innovations, there must come a time when an educational innovation (like RELS) no longer enjoys a special project status (Berman and

McLaughlin, 1978). Either steps are taken to make it a part of regular operations -- resulting in regular use -- or it will hardly outlive the initial enthusiasm and any outside funding that was obtained.

2. Clarity about the Design of the RELS as a Formal Institition

After the leaders and members of RELS have evaluated their early efforts and decided whether RELS can be of further use, the question becomes: "Where do we go from here?" Remember that in Phase 1 we called for "a preliminary design of the RELS process." This was to be done in just enought detail to allow the group to choose an issue and work together on it. If outside funding was to be sought, a higher degree of organization would obviously have been required. But we urged that design for RELS be kept flexible and allowed to evolve as needs change and RELS benefits from its experiences.

At some point, the active RELS participants will want to reach agreement among themselves -- and define for others -- what their RELS is about. For example, a RELS needs to clarify its goals and objectives, its areas of interest, membership goals, how to evaluate progress, etc. Options profiles and other aspects of design covered in Volume 2, You Create a Design, will be helpful in this. A charter or bylaws might then be used, for example, to document what has been decided.

3. Procedures and Organizational Structure that Enhance RELS' Ability to Conduct Collective Inquiry and Action

Closely related to the design of the RELS are the procedures and organizational structure the participants adopt for their RELS. Assume that a group establishes its areas of interest and an issue cycle that performs well. What are the keys to stabilizing the collective inquiry and action process? Let's return to the Citizens League as an example of a RELS -- one which often addresses environmental concerns, among other regional issues.

EXAMPLE: THE CITIZENS LEAGUE PROCEDURE

The Citizens League now has a regular procedure for conducting the collective inquiry and action process. Their purpose is to identify problems facing the community, preferably early, before they reach crisis proportions. Each year the Citizens League selects a few of these for study. Their procedure is:

1. *Ascertain community needs and problems.*
2. *Once a year, compile a list from which issues can be chosen for the research program.*
3. *Trim the list down to the six or so projects the Citizens League will research.*
4. *Use Citizens League committees to study and analyze the problem before considering any solutions.*
5. *Coordinate the work of the various study committees.*
6. *Summarize facts about the issues in a list of findings.*
7. *Summarize the committee's values judgments (based on the facts) in a list of conclusions.*
8. *Summarize the committee's recommendations.*
9. *Submit a committe report on the findings, conclusions, and recommendations to the Citizens League board of directors.*
10. *Obtain approval of the board -- that is, as an official Citizens League position.*

The board of directors is then responsible for communicating the report to others and pursuing follow-up by the appropriate authorities.

One of the keys to Citizen League success is selecting the right issues. The issues chosen by a RELS should be appropriate to its size and capability. Other RELS may find the criteria used by the Citizens League for issue selection helpful. They are summarized in Table 7.1 (Citizens League, 1976).

Keeping the organizational structure appropriate to the size and purpose of the RELS is also a challenge. Choices related to organization include:

- Roles: What are major responsibilities?
- Staff: Who will carry out the roles?
- Finances: How will resources be obtained? Through dues, in-kind services, grants, etc.?
- Operational Policies: What are the policies about members, meetings, election of officers, communications, budget, relationship with other organizations, etc.?

TABLE 7.1: CRITERIA FOR SELECTING THE ISSUES

- Importance: Is the project of importance to the community?
- Urgency: Is action needed now or can the project be delayed?
- Necessity: Will, or can, other organizations carry the responsibility?
- Cost-benefit: Is the estimated impact of the project worth the amount of staff and volunteer time required? Is the project of manageable size?
- Effectiveness: What are the prospects for ultimate implementation of recommendations that might be made?
- Expectation: Is this a project that the community expects the Citizens League to take on?
- Awareness: Is the public generally aware of and interested in the subject?
- Interest: Is it likely that Citizens League volunteers can be recruited for this project?
- Membership: Will the project atttract members with a broad interest, a general interest in the subject, or is it more likely to attract only committee members with expertise and involvement in the subject area?
- Definition: Is the problem adequately defined so that a Citizens League committee would have a clear understanding of its assignment?
- Emotion: Is the problem capable of being resolved by reason based on fact, or are the emotional overtones too large to permit reasoned analysis?

Even an organization the size of the Citizens League strives to operate with a small staff, drawing most of its resources (including time and talents) from volunteers. The purpose of the staff is to provide and coordinate support services; they should be perceived as helping the smaller groups in RELS do their tasks better. Cohen and Lorentz (1977) offer these observations about organizational hierarchy:

> What so often leads groups to develop an "insider-outsider" dichotomy, and therefore to become parochial, is an overriding concern with hierarchy. No group is ever completely devoid of hierarchy. The question for networks is whether the hierarchy is rigid or flexible. For people networks to work, the structure must encourage flexible hierarchy. On any given issue to which the network addresses itself, it should be possible to change the hierarchical

structure to take advantage of individual resources and talents. Flexible hierarchy also facilitates shifts in topics and issues.

4. Established Procedures for Attracting and Orienting New Members

The importance of membership-building has already been discussed (see Chapter 3). In listing it as an outcome of Phase 3, we have two things in mind:

- The RELS needs membership recruitment policies that insure that the network will remain open. In other words, RELS must deliberately plan for the infusion of new people.
- The RELS needs a way to identify and catalog members (existing and potential) in terms of what resources they can offer. This applies to both individual and agencies.

The emphasis here is on recruiting people who will strengthen the RELS, rather than on the size of the membership. The Citizens League, for example, periodically reappraises the size of its membership. Substantially enlarging it would entail costs that run greater than what the League would achieve in revenue, credibility, or impact. Therefore, they have decided instead to focus on maintaining a well-balanced membership -- as representative of the community as possible.

On the other hand, you cannot assume that all the people who should be involved will be interested in joining the RELS, especially if their interests seem threatened. Use publicity and recruitment efforts to show the benefits of coordinating and exchanging ideas and resources.

5. Ways to Insure Ongoing Leadership

This outcome of Phase 3 includes both attracting new leaders and improving the leadership group the RELS already has. The leadership group for RELS consists of those who manage the basic processes of collective inquiry and action: 1) dialogue, decision, action, and evaluation; and 2) agenda-setting, network-building, and organization. Whether it is the coordinator, appointed "officers," or study committee chairpersons, it is essential that these "leaders" be basically RELS-oriented, rather than tied to any one particular issue. In Sarason's experience, it was the leaders who "felt responsible for the networks not in the sense that is was their network, but in the sense that by helping to form the network they had taken on the obligation to make it work. . .." Sarason goes on to say that:

> Relationships among network members cannot be left to chance, especially in the early phases of the network. They have to be forged, and that was Mrs. Dewar's task. More important than enlarging the network or even plunging into actions and programs was strengthening members' knowledge of, respect for, and comfort with each other. (Sarason, 1977)

Regardless of title, the "leaders" of RELS carry out an integrating role. While others may be assigned specific tasks -- for example, researching an issue, obtaining resources, making contacts, scheduling meetings, implementing a project -- the leadership group must coordinate what has to be done. Their primary responsibility is to help members maintain an overall RELS perspective in making decisions. Galbraith examines this role in Organization Design, a book for people who are in a position to make the choices by which organizations will be designed. He points out that this integrating role may not even have formal authority. How, then, does this type of leader exercise influence? There are three bases of influence (adapted from Galbraith, 1977):

- First, the RELS leaders need a wide range of contacts -- with people in positions of power and with a variety of people across the network. They need to build up access to information, so they should search for the crossroads of information streams. In fact, it is this person who is likely to pick up on a miscellaneous point and keep it for later reference or link it to another's needs or ideas. The leader is a broker of ideas, helping people in RELS meet both individual and organizational goals.

- Secondly, the RELS leaders should increase trust among the participants. To do this, the leader has to be RELS-oriented, and neutral where two members of the network may have opposing ideas. The leader also has to be knowledgeable enough about the network members and setting to be able to tell if information is accurate. If the RELS is successful in linking people from a variety of backgrounds and positions, members might need a standard by which to judge the conflicting information they receive. A neutral, knowledgeable person who has their respect can help put people at ease. The leader's influence then comes from an ability to equalize power differences in the RELS.

- Thirdly, the RELS leaders show the members how to make the best use of their group's qualities. The integrating role in collective inquiry is different from that of the other participants. Each participant has something to contribute; the leader must integrate those contributions. Bringing people together who have the information to resolve an issue

> doesn't guarantee they'll use it. The process has to be managed. The group will bring qualities that can help or hinder the process (e.g., difference of opinion). The leader's role is not to make the best decision but to see that the best decision gets made.

RELS leaders need to develop skills in strengthening the RELS as well as in managing effective issue cycles. Based on their study of how innovations are adopted in formal education settings, Culver and Hoban (1973) suggest the following are some of the more important skills for group leaders to have:

- ability to structure the sequence of discussion (to avoid endless discussion)
- ability to distinguish between points of view based on misunderstanding vs. those based on value differences
- ability to help members generate alternative approaches
- ability to provide systematic procedures for reaching agreement
- skill in reaching closure on a decision and moving the group along to the next problem.

6. Continued Expansion of Network Ties

One important aspect of the institutionalizing process is for the RELS to look beyond itself. All the other outcomes described here contribute to a stronger RELS -- their combined effect should also strengthen RELS' position in the community. A RELS should continually seek ties in its setting that can provide:

- assistance and advice pertaining to regional issues,
- access to financial resources,
- access to the people who can carry out RELS' strategies,
- access to the important power centers that might stand in the way of RELS' agenda items,
- access to the people and organizations who can assume responsibility for any "continuation strategies," and
- support for the continuation of RELS in the region.

All this requires careful shaping of network ties to the community. One approach, for example, might be for a RELS to form a linkage with other RELS, enlarging the resource base and opening the door to larger effort -- for instance, a state plan for environmental education.

What Happens during Phase 3

"Institutionalization" refers to a goal or end state more than to a phase through which a RELS is expected to pass on the way to something else. Consequently, it does not make sense to enumerate steps that will "get you from here to there" for this third phase. At best, we can discuss what institutionalization will usually imply.

What can be said here about a mature, operating RELS that has not already been covered elsewhere in these project volumes? Through the different volumes we are trying to convince the reader that a wide range of RELS-like networks for environmental education are possible -- and needed. Exactly how formal and structured any one RELS should be will depend on the region and how people in the region perceive their needs.

In this section -- in place of the usual steps for the phase -- we offer instead some points from a different perspective. How does a RELS become an accepted and useful part of the region? Certainly design, the collective inquiry process, decision techniques, and evaluation are all facets of a RELS' development. But we can also approach the question of institutionalization by stepping out of the day-to-day work of RELS development and examining it as something that happens to the region. Each RELS is a change in how the region handles environmental education. And because it is a change, we can make some predictions about what to expect to happen -- with the help of social scientists, educators, public administrators, and others -- who have studied how such changes occur.

For example, those who reported on the Kettering Foundation's efforts to establish a network of eighteen elementary schools to foster educational innovations found a recurring pattern in how people reacted to change. (Culver and Hoban, 1973)

With the support of the League of Cooperating Schools -- a network of schools and resource people -- each school was introduced to the dialogue, decision, action, and evaluation process. League organizers thought the process could improve schools' ability to undertake innovations successfully. Getting the process accepted and used was usually a slow, but eventually rewarding process. For instance, participating teachers were often reluctant at first to get involved in anything that seemed to demand more time. (Their first attempts at team-teaching or some other innovation might be compared to the trial cycle we describe for RELS as it tackles its first issue.) What the League found was that this could lead to intense dialogue and difficulties -- but the experience of working with other teachers also had many benefits: stimulation, feedback, new ways of planning courses. In other schools the principal took the lead role in bringing in new ideas and encouraging a dialogue among teachers and the community. Teachers often found that type of experience could also be difficult, but rewarding. After five years of experimentation, the staffs in many of the League schools began asking their own important questions about the schools and were able to deal with them constructively. The League had brought about a major change.

The League of Cooperating Schools example will help us illustrate three important characteristics of social change.

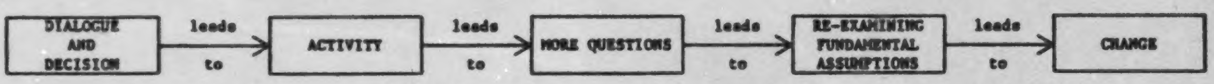
Characteristics of Social Change

1. Often a group must achieve some degree of organization before the reason becomes apparent.

Social scientists uphold the pattern found in League schools. Lindblom maintains that in public administration the rational approach is most often written about but fails to describe the actual complexity of most situations (Culver and Hoban, 1973). Rather than creating a rigid design for a change (like the League or a RELS) from the beginning, groups usually find their experiences help shape their final goals. Often the change activity has to be underway before people can appreciate the complexity involved and can agree on what to do in the long run.

2. Early resistance often proceeds concern with the fundamental questions.

In the League schools, not all the teachers and principals were enthusiastic about experimenting with the dialogue, decision, action, and evaluation process. It required -- among other things -- a shift in roles, taking risks, and a new level of communication. Those who reported on five years of League experience discovered a recurring pattern among the schools. The pattern was:



The schools were encouraged from the beginning to use this process as a way to choose and implement teaching innovations. Participants soon learned that as the collective inquiry process became more visible, a change in one part of the school could affect other parts. This lead to a new desire to work for consensus. Then, after the first big breakthroughs in changing customary behavior, some staffs began to question and reexamine the changes they had made. Often the temptation is to ask an outside expert to pass judgment, but it is something the group must answer for itself. In the successful League schools, the principals and staff were able to turn the collective inquiry process on themselves, to examine critically the changes they had been making. And as a result, some scaled down their new arrangements (e.g., large team-teaching schemes that were more trouble than they were worth).

3. A successful change requires broad support.

The experience of League schools -- like the change efforts reported on by the Rand Corporation or our four examples of RELS -- show that there are certain necessary conditions that must accompany an institutional change. The following list, though not exhaustive, summarizes the more important conditions:

- There must be a group of "early adopters" in the larger setting, a group fairly typical of those expected to be eventually part of the change.
- There must be broad-based support for the change, from the beginning, through the trial efforts and into the institutionalization phase. This support must be evident at all levels of potential users and the community.
- Broad-based support requires keeping people well informed during the change.
- Participation must be voluntary, not imposed.
- There must be strong leadership.
- The change must be viewed as a process, not a series of consultants and inputs.
- People must feel a sense of success and reward as they participate in the change.

Summary

The third phase of RELS' development summarizes what can be done to make the Regional Environmental Learning System a useful, accepted institution in the region. Institutionalization is not so much an endpoint as a state of keeping three things in proper balance. When RELS becomes an institution in the region, there are ideas guiding it, they are accepted and used, and there is an organizational structure to support them.

In this chapter we used six outcomes to define what we mean by "institutionalization." These goals of Phase 3 are: legitimacy as an institution in the region; a more complete design for the RELS; formal procedures; a method of building membership; ways to insure leadership; and continued expansion of network ties. How successful a RELS is in accomplishing these goals is linked to the change process. A Regional Environmental Learning System is a change in the region's approach to environmental education. Three characteristics of social change were discussed to help

RELS' participants anticipate what can happen while they work to institutionalize a RELS in their region.

Appendix A

SOURCES OF THEORETICAL MODELS FOR THE RELS

Model: Organizational Change Process

Beckhard, Richard and Reuben T. Harris. Organizational Transitions: Managing Complex Change. Reading, MA: Addison-Wesley Publishing Company, 1977.

Introduction

Increasing changes in the nature of the organizational world demand an increasing concern with how to manage change. Organizational Transitions is addressed to those who are responsible for managing change in large, complex organizations.

> We define a large-system change strategy as a plan defining what interventions to make where, by whom, and at what time, in order to move the organization to a state where it can optimally transform needs into results in a social environment that nurtures people's worth and dignity. (p. 15)

Devising a change strategy includes choosing the activities and expertise needed to facilitate the change; identifying key actors; establishing a timetable and a way to measure progress; and providing the education the change requires.

Prerequisites for a Successful Change

Two conditions are essential if a change effort is to be successful. First, the leader of the organization must be aware of the need for change, and of the consequences of changing activities. Second, the leadership group should have a relatively clear picture of what the end state of the transition should be like. The first step in planning a change, therefore, is to achieve an accurate understanding of the conditions necessitating a change, a relatively clear idea of what is desired, and an understanding of the present dynamics.

Six Steps in the Change Process

Beckhard and Harris outline six steps in the change process for a large, complex organization. (p. 16) Each of these steps is described below in terms of the planning questions that should guide the management of change.

1. Diagnose the present condition, including the need for change.

    - What needs changing? Differentiate between the symptoms and causes.
    - Why does the problem condition exist?
    - How much does it matter?

2. Set goals and define the new state of condition after the change.

    - What would the organization look like in its new state? Consider, for example, the organizational structure, reward system, authority and delegation, roles, performance review, performance outcomes, etc.

3. Define the transition state between the present and the future.

    - Does the organization's leadership have a choice about whether to change or only how to change?
    - What is the readiness and capability of the subsystems in the organization to change?
    - Where is the best place to start?
    - What is the best way to intervene? What would be the consequences of the possible activities?

4. Develop strategies and action plans for managing the transition.

    - Will the intermediate condition be significantly different from the "before" or "after" state? If so, it will require its own type of management.
    - Are the activities time-sequenced, adaptable, and linked to the eventual goals?
    - Whose support is essential during the transition period? How can their commitments be fostered?
    - What intervention technologies might be useful for dealing with the problem of change? Consider what kinds of change are involved -- changes in relation to the organization's environment, changes in structure, or changes in the way work is done. Specific technologies and methods can help ameliorate these problems.

5. Monitor and evaluate the change.

    - How will you know the change effort has been successful?
    - Has the change effort worked?
    - How will you know how much of the outcome can be attributed to the change effort?
    - How should the change be monitored?

6. Stabilize the new condition and establish a balance between stability and flexibility.

    - What steps will be taken to see that the new condition continues? Management should ensure that there is a process for setting priorities for improvement, that there is a continuous system of feedback, and that the reward system recognizes efforts to maintain the new condition.

Model: Innovation in Education

Berman, Paul and Milbrey Wallin McLaughlin. Federal Programs Supporting Educational Change, Vol. VII: Implementing and Sustaining Innovations. Santa Monica, CA: Rand, May 1978.

Introduction

In 1978, the Rand Corporation published its final report of the four year, eight volume study of educational innovation prepared for the U.S. Office of Education. Rand studied four Federal programs that provided temporary funds (usually for 3-5 years) to foster the spread of new, not existing, innovative practices. The four Federal programs were: Elementary and Secondary Education Act Title III (now a part of Title IV-C, Innovative Projects; Elementary and Secondary Education Act Title VIII, Bilingual Projects; Vocational Educational Act, 1968 Amendments, Part D, Exemplary Programs; and Right-to-Read. The study followed the progress of a sample of 293 local projects that had received this type of funding. For the first two years, research focused on the initiation and implementation of the innovative projects; during the second phase, Rand looked at what happened to innovative projects one or two years after the end of Federal funding.

The aim of the study was to assist the Office of Education in reexamining its change agent policies, for Federal involvement as it had evolved during the "decade of reform" (beginning with ESEA) had produced disappointing results.

> Despite considerable innovative activity on the part of local school districts, the evidence suggests that:
>
> - No class of existing educational treatments has been found that consistently leads to improved student outcomes (when variations in the institutional setting and nonschool factors are taken into account).
> - "Successful" projects have difficulty sustaining their success over a number of years.
> - "Successful" projects are not disseminated automatically or easily, and their "replication in new sites usually falls short of their performance in the original sites." (p. v)

Rand was commissioned to study what might be a more appropriate and effective role for Federal programs in improving the schools. The research focused on how the process of innovation works and the factors that affect the process and its outcomes.

A Model of How Innovation Occurs

One of the major products of the Rand study was a model of the processes of innovation that helps explain how an educational innovation becomes an operating reality, i.e., an accepted part of the regular budget. Though innovations follow different courses, the three characteristic phases are not strictly chronological in the beginning-middle-end sense, because the activities defining each phase often overlap.

> Within each phase, an innovation could follow different paths (i.e., processes) depending on local choices, and characteristics. These paths are of more than academic interest. Some paths typify projects with desirable outcomes -- namely, effective implementation and long-term continuation -- and other paths characterize ineffective or short-lived projects. It is, therefore, important to policy to describe these paths and to examine the conditions leading to them. (p. 13)

Furthermore, major responsibility during each phase shifts among various key actors.

> The phases can be described as follows:
>
> Mobilization -- This phase includes two broad categories of activities: a) planning-related tasks (problem definition, goal setting, proposal writing, selection of participants, etc.); and b) activities that serve to mobilize enthusiasm and support for the project. In the Federally funded projects studied, the central office administrators in the school districts had key roles during the mobilization phase. Depending on which parts of the school district were mobilized, Rand found four "paths" or patterns of support an innovation might receive: opportunism; top-down support; localized support; and broad-based support. The type of support (and the corresponding motivation behind it) proved crucial to the other two phases.
>
> Implementation -- During the second phase, project plans are translated into practice. Here the major actors are the project users, and the entire phase is characterized by adaptation. Because no two settings or group of users are alike, every educational innovation is adapted during its implementation. How adaptation occurred in the project and its institutional setting suggests the "paths" that are possible during this phase. Three patterns emerged from the study:
>
> - nonimplementation, where the project neither altered its setting nor was adapted to it. In this case, projects often break down during implementation or are simply ignored by users who find them extraneous to classroom concerns.

- cooptation, where the project is adapted, but the traditional institutional behaviors go unchanged. Implementation can appear to be deceptively smooth, but because behavior is unaffected, results are short-lived.

- mutual adaptation, where both the project and the setting are changed to achieve a match. This requires broader support and can make implementation chaotic as the project staff try to make the project work. But it is the only "path" that can result in teacher change, setting the stage for a more lasting effect.

Institutionalization -- In this phase, the project either makes the final transition from innovation to an accepted part of the school district's operation, or it ultimately disappears. Where funding is involved, the key question is whether the district continues the new practice when outside funds run out. School officials and school board members have the prominent roles here, but as in the first phase, many other components of the school district may be involved in the successful institutionalization process. The decision to continue the project or practice must receive careful follow-up, or it may continue to be vulnerable to financial, personnel, or political problems. Rand found four patterns within the institutionalization phase:

- discontinuation, when neither the district nor the school decide to continue the project after outside funding ends;

- isolated continuation, which occurs when some teachers continue to use the project although district support does not materialize;

- *pro forma* continuation, when the project is "continued" in name only. For political or other reasons, the school district may officially decide to continue the project but teachers do not use it extensively in the classroom;

- institutionalized change, which occurs when the "innovation" becomes part of the regular curriculum at both the district and classroom levels. Rand found that this rare event usually meant that the project had been successfully implemented, had produced a change in the teachers, and that the new methods had continued to be used extensively. Although these outcomes might also be true of "successful" projects that were continued on an isolated basis, the institutionalized projects followed a different process. From the beginning, plans were made for the eventual continuation; thus district officials were careful to foster broad-based support, throughout the first two phases. Finally, when outside funding ended, school district managers guided the transition of the innovation from its trial status to its place in the regular operations.

The path an innovation follows after the end of Federal funding is to a great extent determined by its prior mobilization and implementation. Figure 1 helps summarize the paths of innovation that Rand was able to describe following its research. At each phase, certain patterns tend to lead to specific patterns in the following phase. In addition, Rand concludes:

> Our research suggests that unless district-level staff were committed to the project from the outset, it was usually not possible to mobilize support for the project once it was underway or at the time that continuation decisions had to be made. (p. 21)

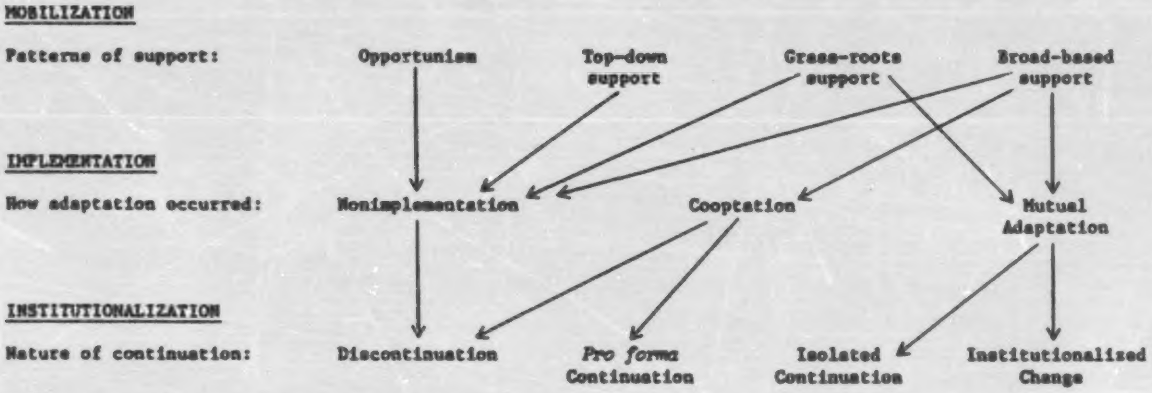


Figure 1: "⟶": Paths of Innovation (p. 17)

Model: Networks

Cohen, Saul B. and Elizabeth Lorentz. "Networking: Educational Program Policy for the Late Seventies." EDC News, *No. 10 (Fall, 1977), 1-4.*

Introduction

Networks of people exist for many purposes -- to get a job, to find a house, to organize a political campaign. Usually these networks just happen; rarely, they are planned. But a great deal of what gets done in life is accomplished within and because of these networks. Therefore, Cohen and Lorentz suggest "that the deliberate creation of people networks represents a major opportunity for advancing a wide variety of national objectives." (p. 1)

Networking Theory

People join networks "out of a sense of enlightened self-interest." (p. 2) Individuals can use the network to establish and maintain links with other network members. Members can use each other as resources to exploit while tackling a common problem. An individual's home base may not offer the resources needed to learn new information, to give and receive assistance, and to fulfill personal desires. A network provides the individual with the opportunity to deal with real world problems more effectively than is possible in other settings.

Members of a network have diverse interests and backgrounds. They bring into the network different approaches to the issues being addressed, different points of view, and different resources to share. Because the network deals with problems of interest to its members, it remains open and flexible, adapting to changing conditions and changing interests.

Structure of a Network

Cohen and Lorentz state that "people networks operate in settings structured to facilitate interaction." (p. 2) One aspect of this network structure is that members are identified in terms of the resources they have to offer. Exchange of resources among members is an important function of the network.

The network must continually be open to new people who bring into the network new outlooks and resources. Work contacts of present network members are excellent prospective members. Careful planning of the network membership can broaden the resource base and strengthen the network.

Structural flexibility can be built into the network by organizing operational subgroups or task forces. A subgroup operates in whatever setting is most appropriate for the problem at hand.

Summary

Cohen and Lorentz conclude their discussions of networks by recommending that "wherever possible, projects and programs supported by the Federal government be required to develop the networking process as part of their operation." (p. 3) This recommendation is based on the authors' experiences with networks in which far more was accomplished when people shared resources than was accomplished when individuals worked alone.

Model: Linkages

Far West Laboratory for Educational Research and Development. A Guide to Interorganizational Linkage in Education. San Francisco, CA: Far West Laboratory, 1978.

Introduction

Far West Laboratory's guide "presents instructions for facilitating the planning, implementation and evaluation of a linkage program." (p. 1) Although written primarily for formal educators, the guidelines can also be used by representatives of the nonformal education sector. The guide defines key linkage concepts and discusses the steps of the linkage process. The purpose of the linkage process is to establish a cooperative agreement among two or more organizations. The linkage enhances each organization's ability to achieve its goals and objectives by facilitating coordination of activities and exchange of resources. The linkage process also results in a set of goals and objectives for the linkage activity itself.

Roles in the Linkage Process

The organizations or institutions that participate in the linkage are represented by people who can commit their organizations to the linkage process. These people are called boundary personnel. Someone from each organization coordinates the linkage process within the organization. This linkage coordinator is one of the boundary personnel. A linkage facilitator, someone from outside the participating organizations, supports the linkage process by suggesting linkage activities, providing training for boundary personnel, and assisting in other ways.

Steps in the Linkage Process

A major section of the Far West Laboratory guide presents a step by step procedural model for carrying out the actual linkage process. The three phases of the model are prelinkage activity, trial cycle of linkage activity, and formalized cooperative arrangements.

Prelinkage activity is carried out by the linkage facilitator meeting separately with potential participating organizations. The facilitator defines the problem or issue needing resolution, then meets with organizations to determine interest in the problem. Commitment to participate in the linkage process is obtained from each organization.

The tasks of the second phase, the trial cycle of linkage activity, are carried out in group meetings with boundary personnel. At the initial meetings, participants learn about linkage approaches. They also examine the goals and objectives of their organization to see where linkage can be useful. Then the organizations can look for mutual goals and objectives for the linkage effort. After agreeing on the specific structures, roles, and responsibilities for the linkage activity, and setting up feedback channels and evaluation procedures, the organizations try out the linkage activity.

After the initial trial cycle of linkage activity, a formalized cooperative arrangement is established among the participating organizations. This ensures the continuation of the linkage effort.

Model: Movements

Gerlach, Luther P. and Virginia H. Hine. People, Power, Change: Movements of Social Transition. New York: The Bobbs-Merrill Company, Inc., 1970.

Introduction

In People, Power, Change, social scientists Gerlach and Hine analyze the relationship of movements (social, political, religious, and others) to social change. Their position is that movements are both the cause and effect of social change. A "movement" is defined as:

> a group of people who are organized for, ideologically motivated by, and committed to a purpose which implements some form of personal or social change; who are actively engaged in the recruitment of others; and whose influence is spreading in opposition to the established order within which it originated. (p. xvi)

The study was the result of three years of research into two modern movements -- Pentecostalism and the Black Power Movement. Usually this type of study focuses on the generating conditions which give rise to such movements. Here, however, the approach was to analyze the internal dynamics of movements, rather than the reasons for their origins. Five key factors emerged from the study of the worldwide spread of Pentecostalism. Later, the same factors were recognized in the Black Power Movement. Finally, through library research the authors discovered that the factors were useful in understanding other movements as described by anthropologists, sociologists, political scientists, and historians.

The Five Characteristics of a Movement

At what point does a group or collective become a movement? Are there factors beyond the generating conditions which are also responsible for the start of a movement? Gerlach and Hine identified five key factors which are crucial to a movement's growth. Only when all five of these factors are present and interacting, does a collectivity become a movement -- it becomes an autonomous social institution and can grow independently of the original generating conditions. These five factors are described below:

1. A segmented, polycephalous organization in which the parts are related through various personal, structural, and ideological ties. In this type of organization, there is no hierarchy of decision-making. A number of "leaders" may arise and each may attract a substantial following; yet none of the leaders can make decisions binding on all members of the movement and none can speak for the movement as a whole. To outsiders, men like Martin Luther King, Malcolm X, Eldridge Cleaver and Stokely Carmichael might have appeared to be the key individuals without whom the Black Power Movement of the late 1960's might have come to a halt. Instead not one could be called the leader of the movement. In fact, the list of influential leaders might need to be updated several times a year. In this type of organization, there is no roster of all the groups who consider themselves participants in the movement. However, members recognize each other, looking for subjective, shared qualities they understand and respect. This, rather than formal membership requirements, ties the nodes of the network together.

2. Face-to-face recruitment. "No matter what conditions of social disorganization or social or psychological deprivation facilitate the rise of a movement, the key to its spread is to be found in the process of face-to-face recruitment by committed participants." (p. 97) Leaders, of course, can have a significant effect on the commitment process, but most often recruitment follows the lines of preexisting relationships, e.g., kinship, neighborhood, professional, friendship, etc. Furthermore, individuals are recruited to specific cells in the network, rather than to the movement itself.

3. Personal commitment on the part of most, if not all, the participants. This commitment is "generated by an act or experience which separates a convert in some significant way from the established order (or his previous place in it), identifies him with a new set of values, and commits him to new patterns of behavior." (p. xvii) There is a close relationship between the factors of commitment and ideology in a movement. But it is interesting to note that a uniform, high level of commitment is not essential to the growth of a movement. In fact, the authors suggest that less committed members have an important function in movement dynamics. By acting as a buffer between the highly committed "radical" participants and the rest of society, they keep opposition at a manageable level. Risk is required, but the movement avoids suppression. These members also provide the movement with organizational stability and can attract recruits who may be offended by more intense members.

4. An ideology which provides the basis for overall unity. Some of the characteristics of a movement ideology are: dogmatism and certainty coupled with an adaptive ambiguity; a combination of basic beliefs and constant application to specific situations; a tendency to permit only positive reinforcement; and a dichotomous world view which is used to define the opposition. (p. 182) The ideology of a movement helps define the opposition and provides members with a rationale for the changes they desire.

5. Real or perceived opposition. Without opposition from the established order, there would be no risk, and hence no commitment required for participation. Gerlach and Hine found that, once a movement is underway, opposition, short of total annihilation, provides optimal conditions for movement growth.

Clearly social change involves changes on the part of individual members. People, Power, Change draws the conclusion that a successful movement is the point of intersection between personal and social change. The five characteristics of movements describe a basic type of organization and the methods by which it grows. Understanding the internal dynamics of movements can offer insights into both personal and social transformations.

Model: Networks

Hine, Virginia H. "The Basic Paradigm of a Future Socio-cultural System." World Issues, Center for the Study of Democratic Institutions, Vol. II, April/May 1977, 19-22.

Introduction

During the past ten years Hine and her colleague, Luther P. Gerlach, have been doing research in a wide range of "movements" -- political, social, religious, and others. They have observed the same basic structural form and mode of functioning no matter what the type of movement. They have called this type of structure a "segmented polycephalous network," written as SP(I)N. (p. 19)

Characteristics

A SP(I)N is a network composed of many nodes or segments. This type of segmented structure contrasts with the hierarchical structure of a conventional bureaucratic organization. Each segment has its own internal organization and is capable of functioning independently.

The leadership of a SP(I)N is decentralized. Movements do not have a single leader who speaks for the entire movement. The leader or leaders of one segment may not be recognized as leaders by members of other segments of the movement. Within a segment a leader perhaps does no more than speak for the group, rather than make decisions.

Linkages

What holds the SP(I)N together are horizontal organizational linkages and ideological bonds. There are several types of organizational linkages. One is overlapping membership. Members of one segment of the movement are often also members of another segment. There are also linkages among the leaders of various segments. Another type of linkage is the "ritual activity," such as a rally, demonstration, conference, or revival meeting, which brings together members and leaders of many segments of the SP(I)N.

Hine states that "perhaps the most significant aspect of the segmentary mode of organization is the role of the ideological bond." (p. 20) Indeed, the SP(I)N is held together by the power of this ideological bond that forms when various segments of the network share a strong commitment to a few common ideas.

Benefits

The SP(I)N, according to Hine, represents "an adaptive pattern of social organization." (p. 20) Because it emerges out of functional necessity rather than rational planning, this type of structure provides benefits not possible in other organization structures. The SP(I)N:

- encourages full utilization of individual and small group innovation while minimizing the results of failure;
- promotes maximum penetration of ideas across socioeconomic and cultural barriers while preserving cultural and subcultural diversity;
- is flexible enough to adapt quickly to changing conditions; and
- puts a structural premium on egalitarian, personalistic relationship skills in contrast to the impersonalistic mode of interaction suited to the bureaucratic paradigm. (p. 20)

Model: Administration and Patterns of Behavior

Kotter, John P. and Paul R. Lawrence. Mayors in Action. New York, NY: John Wiley & Sons, 1974.

This model of mayoral behavior was drawn from a study of twenty mayors and their administrations during the 1960's in large and moderate-sized American cities. Only former mayors were studied; observation and the interview were the chief tools used. During the first phase of the study data were collected on a small number (six) of mayors. Then, in the second phase, the conclusions drawn in the first phase were tested on a larger number (fourteen) of mayors. The model presented by Kotter and Lawrence was derived from their analysis of the data they collected during the two year study.

The model consists of the following three key processes:

• AGENDA SETTING	deciding what to do
• NETWORK BUILDING	getting and managing the necessary resources to pursue the agenda
• TASK ACCOMPLISHMENT	carrying out specific tasks that are on the agenda

In addition to the three processes, there are four contextual variables in the model:

• THE MAYOR	includes the mayor's cognitive skills, interpersonal skills, needs and drives, and values and aspirations
• THE AGENDA	the short-, medium-, and long-run tasks the mayor is currently planning to undertake, specified in as much detail as possible.
• THE CITY	the city's interdependent subsystems (health care, transportation, education, etc.), size, rate of change, homogeneity, and the mayor's domain (area in which the mayor is trying to have an impact)
• THE NETWORK	members' relationship to the mayor, resources members command, and members' expectations of the mayor

There are a number of values associated with the Kotter and Lawrence model. It focuses on both structure and process. Applying the model to analyze the behavior of a mayor can help determine what processes and structures would significantly improve the mayor's effectiveness. Also, the model identifies key contextual variables and permits identification of coalignment among these variables. According to the model, as least one key relationship exists between each of the contextual variables (agenda-network relationship, agenda-city relationship, city-mayor relationship, network-city relationship, network-mayor relationship, and mayor-agenda relationship). These relationships are such that if any two contextual vairables are not aligned, the consequences of that nonalignment eventually create problems for the mayor. If all four contextual variables of a mayor's system are aligned simultaneously, a state of coalignment exists. A mayor exhibits coalignment behavior when he or she attempts to move his or her system toward a state of coalignment. This behavior is considered desirable; it consists of patterns of behavior that deal with short-run constraints and produce impacts on the four contextual variables. Coalignment behavior either moves the system toward, or maintains it near, a state in which all six relationships among the contextual variables are aligned.

The authors offer several implications of the coalignment model. One implication is that the network concept is useful in understanding administration and mayoral behavior. Kotter and Lawrence suggest several questions for future network research. They raise several questions about networks, and make some disturbing predictions about urban crises that will result from nonaligned systems.

Model: Study Action Planning Process

Nix, Harold, L. The Community and its Involvement in the Study Planning Action Process. Atlanta, GA: Center for Disease Control, 1977.

Introduction

This book is addressed primarily to health planners, public health officials, and community organizers interested in improving community health. The first part of the book provides a conceptual basis for understanding the nature of community, community leadership, and community change. It explores topics such as types of community leaders, principles of change, and basic approaches to planned change. An approach is offered for determining the leaders, organizations, factions, and linkages in a community. Part Two of the book describes in detail the study planning action process for community improvement.

Steps in a Planned Community Change Process

The recommended steps in the study planning action process are stated broadly so they are applicable to any community goal or project. The steps are:

1. Recognizing and describing the need or problem in the community.
2. Determining of relevant organization leaders and factions who should be consulted on the problem or need.
3. Initiating and legitimizing the need.
4. Diffusing the need to the public.
5. Organizing a study and plan to carry out the project.
6. Studying and planning (that is, look at the facts and plan what specifically is needed).
7. Implementation.
8. Evaluation of the total process and its effectiveness. (p. 87-88)

Model: Resource Exchange Network

Sarason, Seymour B., Charles Carroll, Kenneth Maton, Saul Cohen, and Elizabeth Lorentz. *Human Services and Resource Networks: Rationale, Possibilities, and Public Policy.* *San Francisco, CA: Jossey-Bass Publishers, 1977.*

In this book Sarason and his colleagues describe the Essex network -- how, over a three-year period, it emerged and developed into a loosely organized, informal association of several hundred people. The purpose of the network is to figure out ways that members can exchange ideas and resources for their mutual benefit. Through their participation in the network, people from a wide variety of backgrounds and job settings "use" each other as resources to further their work goals and to enhance a sense of community among themselves.

It is important to understand the underlying rationale for the Essex network. As the authors thought about the concept of a network they realized that examining the relationship between two often overlooked factors might provide new insights. The two factors are: the fact that resources (human and material) are always limited, and that people long for a more substantial sense of community. The authors' conclusion was that people would have to accept the fact of limited resources before they could experience a more satisfying feeling of community. In other words, people needed to realize that achieving their goals would require them to exchange resources in barter style with others who had some of the resources they needed.

This rationale requires people to perceive themselves and their agencies or organizations in new and different ways. Much of the book describes the activities and procedures (like meetings) that best highlight and test the resource exchange rationale. The authors thought it important that readers understand the significance of network meetings, because these meetings are so essential to the growth of the network. The meetings also function to provide some sense of community among network members.

The book also discusses other important aspects of the network, including funding, leadership, and staffing. Whenever possible, these topics are discussed in terms of the rationale; that is, the special problems, opportunities, and dilemmas that occurred in the Essex network because of the rationale.

In summary, the most important contribution of this book is that the Essex network demonstrates that there are constructive and creative ways of dealing with limited resources and with people's need for a sense of community.

Model: Resource Exchange Network

Sarason, Seymour B. and Elizabeth Lorentz. The Challenge of the Resource Exchange Network. San Francisco, CA: Jossey Bass Publishers, 1979.

In this book, their second about the resource exchange network, Sarason and Lorentz further expand the ideas presented in Human Services and Resources Networks (1977). That book describes in detail the development of the Essex network as a resource exchange network, and reviews the literature on networks. This book goes beyond the first by offering step-by-step guidelines for overcoming the obstacles to network development and operation. It deals at length with the fact of limited resources and gives examples of what happens when people redefine themselves as resources.

This is the resource exchange rationale -- individuals not only redefine themselves as resources but also seek to use each other's resources in a mutually satisfying way, in a way that enhances the limited resources of each. This kind of networking activity also results in a sense of community among people who share resources.

The authors discuss the role of the network coordinator, particularly the cognitive characteristics of such an individual that seem crucial to network development and maintenance. These individuals have accepted the resource exchange rationale -- that resources are limited -- and have the ability to get others to see how resource exchange and networks can be beneficial to everyone involved.

Numerous examples and case descriptions convey to the reader the wide variety of work settings, disciplines and professions, and geographic areas where people are involved in resource exchange networks. By describing and understanding the similarities and differences among widely varying examples, the authors provide insight into the potentials and the obstacles to the implementation of a resource exchange network.

Model: Organizational Effectiveness

Schein, Edgar H. Organizational Psychology. *Englewood Cliffs, NJ: Prentice-Hall, Inc., 1970.*

How do you Measure an Organization's Effectiveness?

Because organizations have multiple functions, it is suggested that effectiveness be defined in terms of systems-level criteria. Output and satisfaction at any one point aren't enough -- instead, Schein says to look at "the processes through which the organization approaches problems". Definition: system effectiveness means the capacity to survive, adapt, maintain itself, and grow regardless of the function it fulfills.

Criteria for "Organizational Health"

Organization effectiveness is all of these. Key question: Viewed on a system, how does the organization demonstrate the following:

1. adaptability -- ability to solve problems and to react to changing demands with flexibility
2. sense of identity -- self perception on the part of the organization of what it is, what its goals are, what it is to do. (Questions: Is the perception shared widely in the organization? In line with others' perceptions of the organization?)
3. capacity to test reality -- ability to search out, accurately perceive and correctly interpret the real properties of the environment, especially those with relevance for the functioning of the organization

The Organization's "Adaptive-Coping Cycle"

Look at the six stages in the cycle to see where organizations typically fail to cope adequately (i.e., are not effective).

1. Sense a change in some part of the internal or external environment.
2. Impart information about the change to those in the organization who can act upon it.
3. Change whatever needs to be changed within the organization.

4. Stabilize the internal changes while minimizing any undesirable by-products of the change

5. Export the new products or services which are more in line with the perceived changes in the environment

6. Obtain feedback on the success of the change

    - How was the change received by the outside environment?
    - How well was the change integrated internally?

Problems and Pitfalls in the Cycle

1. Failure to sense changes in the environment or incorrectly sensing what is happening.

    - timing is important
    - if multiple functions are involved, be sensitive to changes in any of them
    - research and polling have arisen as aids

2. Failure to get the relevant information to those parts of the organization that can use it.

    - might involve a lengthy program of influencing attitudes, self-images, and working procedures
    - might be difficult to get people to take the information seriously (may be threatening)
    - consultant with prestige may help the communication

3. Failure to influence the conversion or production system to make the necessary changes.

    - a forced change risks resistance in the production or conversion part of the organization (systems with their own coping principles have to go through the cycle themselves)
    - aid: involve the subsystem in decisions on how to change

4. Failure to consider the impact of changes on other systems and failure to achieve stable change.

    - assess the effects of a proposed change on the other parts
    - if possible, use linkages that are there to spread the change

5. Failure to export the new product, service, or information.

    - key information about the change reliable
    - can put a neutral "outsider" to work to help do this

6. Failure to obtain feedback on the success of the change.

    - much like #1, but many organizations have ways to check the impact of a change

Appendix B

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